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Aesthesis Universalis: Reconciling Aesthetic Philosophy and the Cartesian Paradigm

Taryn Sweeney
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AESTHESIS UNIVERSALIS: RECONCILING AESTHETIC PHILOSOPHY AND THE
CARTESIAN PARADIGM

Taryn M Sweeney

Submitted to the faculty of
The Institute for Doctoral Studies in the Visual Arts
in partial fulfillment of the requirements
for the degree
Doctor of Philosophy

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COMMITTEE MEMBERS

Committee Chair: Don Wehrs, Ph.D.

Hargis Professor of English Literature

Auburn University, Auburn

Committee Member: Merle Williams, Ph.D.

Personal Professor of English

University of Witwatersrand, Johannesburg

Committee Member: Kathe Hicks Albrecht, Ph.D.

Independent Studies Director

Institute for Doctoral Studies in the Visual Arts, Portland

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ABSTRACT

Taryn M Sweeney

AESTHESIS UNIVERSALIS: RECONCILING AESTHETIC PHILOSOPHY AND THE
CARTESIAN PARDIGM

The Cartesian paradigm, in its modern existence, can be understood as comprised of four pillars—the founding principle of cogito ergo sum, dualism, a mechanistic worldview, and mathesis universalis. Each of these four pillars contributes to aesthetic philosophy in foundational ways that are largely unacknowledged. This error is owed to literal readings of Descartes’ works that neglect the operational intentions of his paradigm. When one approaches the Cartesian paradigm operationally, it is revealed that aesthetic philosophy owes a tremendous debt to Descartes’ works. Moreover, modern philosophers have dedicated substantial efforts to connecting subjective concepts such as mood and sensation to Descartes’ paradigm. These connections, which all rely on literal readings of the paradigm, are often tenuous and depend heavily on large extrapolation from small notations. However a broader reading of Descartes’ model of the soul reveals a unique niche for subjective expression which provides a distinct role for aesthetic considerations in his epistemology. Revelatory knowledge—knowledge of a nonscientific nature that reveals things as they are—need not be marginalized from mathesis universalis. What is more, it is revealed that aesthetic philosophy is one of the largest contributors to the overall project of mathesis universalis in modernity. This contribution is based on the act of poesis—a form of knowledge-making that is grossly overlooked as an epistemological process. A series of paintings by Joseph Wright of Derby provide a case study of how revelatory knowledge can be integrated with, and inform, the Cartesian paradigm.

Concepts of modernity by Hans Blumenberg illuminate the need for understanding revelatory knowledge as integral to *mathesis universalis* by imaging the pillar as an evolving mechanism of human construction. In conclusion, a discussion of the parallels between aesthetics and other marginalized epistemic sources (women, artists, and fiction) reveal consonant efforts to reshape *mathesis universalis* as more inclusive of revelatory knowledge.

Keywords: Descartes, Epistemology, Joseph Wright of Derby, Cartesian paradigm, Sources of Knowledge

Table of Contents

INTRODUCTION	1
CHAPTER 1	4
Introduction	4
The Question of Need	5
The Cartesian Paradigm: The Four Pillars	6
The Cogito as Performance and Peacemaker	7
Dualism as a Practical Concept	16
Mechanistic World View	20
Mathesis Universalis	24
The Constitution of an Aesthetic Program	26
The Arts and Knowledge	34
CHAPTER 2	37
Connecting Descartes to Aesthetics	37
The Aesthetic Positions of Descartes' Influences	38
Augustine and Descartes	39
Plato and Descartes	41
Aristotle and Descartes	44
Filling the Aesthetic Void	47
The Body as a Sensing Machine	49
Mood and Objectivity	53
Introspection as a Means of Objectivizing the Subjective	59
Heidegger's Four Principles Opposing the Cartesian Paradigm	65
Heidegger and Aesthetics	71
CHAPTER 3	74
Descartes and Beauty	74
The Cartesian Model of the Soul: A Synthesis of Plato and Aristotle	75
The Characteristics of the Cartesian Soul	82
Cartesian Morality and Virtue	85
Cartesian Practical Ethics	90
Descartes' Views on Poetry as Medicine	93
Descartes on Beauty	97
CHAPTER 4	100
Introduction	100
<i>Mathesis Universalis</i> and the Exclusion of Aesthetic Philosophy	101
Picking Up. Vs. Setting Down Knowledge	102
Empiricism Vs. Rationalism Germane to Aesthetics	105
Epistemology and Aesthetics	109

Poiesis as an Epistemological Practice	115
Poiesis as Knowledge Making.....	117
Poiesis as the Antithesis of Mathesis	119
Wordsworth.....	125
<i>Mathesis Universalis</i> and the Systems of Universalization	127
Beginning with Descartes	129
Leibniz and Universal Calculus.....	133
Gottlob Frege.....	134
Ludwig Wittgenstein.....	139
CHAPTER 5	143
Wright of Derby as a Moment in the Development of Universalization.....	143
Wright as Self-Funded Painter	146
Wright's Sociocultural Milieu	149
The Zeitgeist of Mid- to Late-Eighteenth Century England.....	152
The Aesthetic Discourse of the Late Eighteenth Century	155
The Shift from the Harmonious Renaissance to the Sublime and the Picturesque	159
The Philosopher Painting: Analysis of Wright's "Science Paintings"	167
The Science and Society Paintings.....	179
CHAPTER 6	193
Introduction.....	193
Working on the Cartesian Paradigm	196
Poiesis and Onomathesy as Related Practices.....	203
Aesthetics, feminism, and science fiction as traditionally marginalized groups	209
The Feminist Perspective	211
Velasquez's Feminist Critique of the Nobility of Knowledge	220
Fiction as a Marginalized Epistemological Practice	231
Ursula K. Le Guin.....	234
Gaiman's "The Mushroom Hunters"	239
APPENDIX A	242
ENDNOTES.....	Error! Bookmark not defined.

INTRODUCTION

Modernity is a game played upon the gridded chessboard of the Cartesian paradigm. This paradigm is four-pillared, consisting of a mechanistic world-view, mind/body dualism, the guiding principle of the Cogito, and (the most fascinating of all) the concept of *mathesis universalis*. While Descartes himself may have laid out more pillars than these, these four have survived the scrutiny and criticisms of the philosophers who have followed.

I present these four pillars as immovable forces in Western philosophy, and as such a significant area of inquiry for any practicing philosophy scholar. What I will maintain throughout is that the exclusion of aesthetics from the paradigm is not fundamental to the operations of the four pillars. None of them necessarily requires an exclusion of concepts germane to aesthetics to continue their project of universal epistemology. What is more, I will argue that aesthetics, as a branch of formal philosophy, is based upon these four pillars.

In Chapter 1, I will present these pillars and discuss how they are integral to the development of contemporary aesthetics, despite their perceived opposition to qualitative concepts. This chapter explains these four pillars in the context not just of the Cartesian paradigm, but also in the context of their relation to aesthetic discourse. I begin in this way not only as a means reviewing primary Cartesian texts, but also to underscore how much these four pillars are still relevant today. It is true that each pillar has received renovations over time, some prompted by post-modern sensibilities regarding mind-body dualism. Other changes are spurred by expanding notions of what universal epistemology must entail –gender and cultural diversity, for example.

In Chapter 2, I will present several different approaches to reconcile aesthetics to Descartes, which I see as having various degrees of success and completeness.

In Chapter 3, I will thoroughly investigate Descartes' model of the soul. I will demonstrate his synthesis of Platonic and Aristotelian ideas, as well as discussing the incompleteness of the Cartesian model of the soul in terms of its lack of attention to personal expression.

It is my intention with these first three chapters to present the Cartesian paradigm in a new light. Rather than approaching it as Descartes would have seen it on his own terms, I present it as the underlying platform of subsequent Western philosophy. Whereas Alfred North Whitehead remarked that all philosophy is a footnote to Plato, I think it more accurate to say that all modern Western philosophy is an addendum to Descartes. Though many philosophers have moved to reject Descartes, one cannot fully excise the Cartesian paradigm from the Western consciousness. Its four pillars (the four aspects that integrally form those aspects of the paradigm that persist in our contemporary time) are still operationally identical to how Descartes had intended them despite numerous renovations.

In Chapter 4, I will present the work of Martin Heidegger, the greatest opponent to Descartes, in order to demonstrate that the most researched of critiques of the Cartesian paradigm cannot escape his influence. I will then sketch a history of universalized systems of knowledge beginning with Descartes, moving through Gottfried Leibnitz, on to Gottlob Frege, and concluding with Ludwig Wittgenstein. This history will serve as evidence of the evolution of *mathesis universalis* since Descartes' original conception of the pillar.

Of the four pillars, this dissertation focuses most upon that of *mathesis universalis*: the fully encompassing schema of knowledge that Descartes postulates. Our understanding of

mathesis universalis, indeed of all universalized-epistemic paradigms, is enriched when we properly understand the continual marginalization of aesthetics as un-necessary. Though Descartes' exclusion of aesthetics from the realm of true knowledge has been influential in formal philosophy, there are works of art that integrate aesthetic modes of perceiving into those modes of knowledge indebted to Descartes. An examination of an artist (Joseph Wright of Derby) whose work pursues such an integrated project, as we shall explore in Chapter 5, shows that aesthetic/artistic dialogue with the concept of mathesis universalis is possible, though examples of it have rarely been recognized. Wright's paintings, as seen in the fourth chapter, will demonstrate how aesthetic practices may enrich articulation of the four pillars of the Cartesian paradigm.

In Chapter 6, I will briefly sketch the work of Hans Blumenberg, showing how his ideas about modernity shed light on how the pillar of mathesis universalis might be modified to include ideas of human evolution—ideas that profoundly impact mathesis universalis. I will next examine paintings by Baroque painter Diego Velasquez in terms of their epistemic connotations, revealing possible visual dialogue with the Cartesian paradigm. Concluding with an avenue for further research, I will discuss two contemporary authors, Ursula K Le Guin and Neil Gaimon, and how their respective works bring to light extra-Cartesian aspects of mathesis universalis.

CHAPTER 1

Introduction

In this chapter, I will describe the four pillars of the Cartesian paradigm as integral to one another, and as foundational to modern Western discourse. What is revealed by this analysis is the enormity of the debt aesthetics (as a branch of formal philosophy) owes to the four pillars of the Cartesian paradigm. This demonstration should dispel any doubts as to the “compatibility” of aesthetics and the Cartesian paradigm. I will next show how in the articulation of each of these four pillars there are implicit references to aesthetic ideas, though Descartes’ program itself unnecessarily marginalizes aesthetic concepts. In doing so it betrays its own aesthetic underpinnings. I will then describe the constitution of an aesthetic program as we, since the eighteenth century, have come to understand the term. In this description I will reveal how later articulations of aesthetics implicitly build upon Descartes’ pillars. This description will reveal a relationship between the Cartesian paradigm and aesthetics that Descartes did not anticipate. I will then briefly discuss the two primary texts by Descartes that were aimed at fully encompassing epistemology and the methodology for inquiry. Through this we may see Descartes’ initial vision was to provide a program for objective inquiry. His methodology was soon adapted to explore the subjective experience in taking in external knowledge. Finally, I will conclude with an anticipation of the deeper conversation in Chapter 4 wherein I argue that works of art interested in aesthetics and in the Cartesian paradigm may provide us insight into implicit undeveloped connections between Descartes’ model of knowledge and aesthetic modes of knowledge.

The Question of Need

I will argue that Descartes errs in omitting the arts and aesthetics from his paradigm. This omission has been taken as fundamental to his methodology, and upheld by those who have followed in his tradition, as no one has yet to suggest that an implied aesthetic program could be drawn from the Cartesian paradigm. This dissertation will endeavor to do so and thus open possible doorways for the establishment of an implied Cartesian aesthetic program.

Many Western philosophers treat art as something special making it an “other” to various fields of study. It is worth examining why that separation is so prevalent. While some might argue that this tendency stems from Plato, the true source of art’s peculiar status over the past four hundred years may be found in the tenets of the Cartesian paradigm. However, I find the basis of this exclusion to be widely misunderstood and the power of the arguments leading to it to be erroneous.

This chapter introduces the Cartesian paradigm and then establishes what exactly constitutes an aesthetic program. Primary evidence from Descartes’ own writings establish opportunities for an implied Cartesian program of aesthetics. Secondary literature on Descartes also suggest opportunities for developing aesthetic notions relevant to Descartes’ thought. To be clear, Descartes himself provided few specific remarks concerning aesthetic concepts and did not foresee that his epistemological paradigm could include subjective and aesthetic knowledge. I am making the case that the establishment of an implied Cartesian aesthetic program is a legitimate pursuit as it enriches our understanding of the reaches of both aesthetics and of the Cartesian paradigm.

The next sections inquire into the wider context of the individual pillars and how they have been discussed by subsequent literature. I will show that the broader conversation of the

Cartesian tradition brings to the fore aesthetic concepts such as beauty, mimesis, and quality. While that does not in itself answer the question “Is there a need to establish a place for aesthetics in the Cartesian paradigm?” it does at least open up the possibility for a sound implied Cartesian aesthetic program.

Throughout this dissertation I will use the term operational in contrast to the term literal. Rather than interpreting Descartes’ paradigm solely through his own explicit writing (the literal approach), I intend to evaluate his paradigm by the broader operations of the four pillars as they exist today (the operational approach). This is not to say we should dismiss, or even circumvent, his original words. On the contrary, the next chapter is dedicated to an in-depth examination of his works that are germane to the topics at hand. However, to conduct philosophical discourse that relies solely or heavily on the mere words of a master perpetuates an academic kind of fundamentalism that yields little progress and prevents one from applying important ideas from one era to the next. We must give more weight to the practices and schemas developed from a philosopher’s work if we are to truly enrich our contemporary philosophic endeavors. In Chapter 2, I will more fully flesh out the importance of an operational approach.

The Cartesian Paradigm: The Four Pillars

As the phrase “Cartesian paradigm” could conceivably refer to many aspects of his original philosophy, it behooves me to explain what I refer to specifically. There are four pillars of the Cartesian paradigm: the mechanistic worldview, the cogito, mind-body dualism, and *mathesis universalis*. Without each of these pillars, the entire paradigm collapses. Descartes intended his paradigm to be a means of situating the subjective, thinking self in an objective world and therefore it encompasses both objective and subjective frames. It begins with the

subjective assertion that one exists, and next moves to determining the boundaries of the self in an objective world. The thinking being is then compelled to make order of the world it inhabits. Taken in this way the integral nature of the paradigm becomes evident. In order for the rational, thinking being to accept that she is not being deceived by the representations of objects presented to her, she must accept the foundational propositions that she exists and that the world has a somewhat fixed order. She must be able to engage in a cognitive process that fully divides what is of herself from those representations in her mind that are not of herself. She must understand that in separating herself from the world she is taking on a cognitive heuristic endeavor and not physically separating herself from nature. And she must understand knowledge to be discoverable, but not as created by humans. In these next sections I will approach each of these pillars in depth and demonstrate how in each one there is an implicit doorway to aesthetic discourse that has yet to be fully developed.

The Cogito as Performance and Peacemaker

The proposition “*cogito ergo sum*” (often abbreviated as the *cogito*) is perhaps the most influential statement in the history of Western thought. I will argue against reading the cogito simply as a proposition. The term *cogito* as I will use it in this dissertation can be understood as the result of a performative meditation that has three related modalities:

- 1.) The proposition itself
- 2.) The meditation that allowed Descartes to logically arrive at his views of the conscious-self
- 3.) A ritual of decorum that is offered to fellow scientists/philosophers as a two-part tool of peacemaking within the then-chaotic field of natural philosophy

As stated above, when approaching philosophic discourse operationally it is essential that the practices and schemas that develop from a particular stance are kept in focus. This requires an understanding of ideas beyond their literal expression. In the passages that follow I will show how this expanded definition of the cogito operationally establishes a foundational link between aesthetics and the Cartesian paradigm.

Explicitly written in *Discourse on Method* (1637) and then referred to in Descartes' other philosophical texts, the statement of the cogito is typically paired with musings on the discomfort one would feel knowing that a thinking thing does not exist while it thinks.

While we thus reject all of which we can entertain the smallest doubt, and even imagine that it is false, we easily indeed suppose that there is neither God, nor sky, nor bodies, and that we ourselves even have neither hands nor feet, nor, finally, a body; but we cannot in the same way suppose that we are not while we doubt of the truth of these things; for there is a repugnance in conceiving that what thinks does not exist at the very time when it thinks. Accordingly, the knowledge, *I think, therefore I am*, is the first and most certain that occurs to one who philosophizes orderly. (*Principles* 10)

This passage is significant as it stresses a qualitative need for calm. It sets the need for the mind to purge itself of toxic effects in order to pursue objective inquiry. If the mind is discomfited, it cannot proceed clearly and rationally. What Descartes leaves unsaid is that a qualitatively defined calm constitutes the prerequisite upon which scientific inquiry may proceed. Descartes acknowledges that the mind must be calm to perceive what is clear and distinct. What he fails to emphasize is the process by which this calm is achieved and how this calmness must be understood by both reason and the senses for thought to continue. It is precisely this linking of

reason and the senses that provides the strongest evidence for an aesthetic precondition to the Cartesian paradigm. All three aspects of the cogito (the statement, the meditation, and the ritual) are governed by the intention of calming the mind in a manner that is aesthetically pleasing. Reason may then proceed unfettered by the angst created by certain traditional metaphysical inquiries.¹

If we understand the cogito in these three related modalities, then we understand the therapeutic affective consequences of this statement for the individual. To see the cogito as the conclusion of an introspective meditation is an easy first step. Descartes' process of hyperbolic doubt leads him to the cogito as a foundational epistemological kernel that all other knowledge may proceed from. But intrinsic in the writing of the mediation, there is also the expectation that the reader as a fellow philosopher will proceed through the same process on her own. When the reader arrives at this conclusion, she will enjoy a stable affectual state, Descartes believes. Being in this affectual state her reason may proceed unfettered by the types of metaphysical doubt that Descartes finds improper, outmoded, and purposeless for scientific inquiry. As others in the philosophic/scientific community read and reenact this performance, they enter a social contract of sorts that is bound by the foundational tenet of the cogito and affectual conditioning that it provides. Descartes is, simply put, providing a schema that operates on principles of decorum for fellow members of the philosophic/scientific community. They will be able to pursue reason from an affectual baseline of comfort. He has provided a model of appropriateness, or decorum, for one's further participation as a peer in the community of philosophers, having set the aesthetic precedent for the staging of *clear and distinct communication*.

The metaphysical security that arriving at the statement of "cogito ergo sum" permits serves a second purpose beyond initial calm that is more relevant to Descartes' time. It is also

relevant in addressing the anxieties and uncertainty aroused by religious dispute in Descartes' time. Coming to see for oneself and to feel for oneself that *cogito ergo sum* is true, provides existential calm without any necessary reference to a specific version of god. This would be important for Descartes as different ideas of god were extremely divisive, to the point of creating decades-long civil wars. Entire books have been devoted to explicating Descartes' ontological argument² and exploring its significance to the sciences and subsequent Western philosophy. There is no need to rehearse that here. It is sufficient to note that Descartes' argument (found in the third and fifth *Meditations*, as well as in *Principles*) boils down to the claim that certainty of existence springs from a clear and distinct idea of a non-deceiving God. Having shown the thinking being how to "solve" the issue of the existence of God, Descartes believes that his readers would then be free to study objects of the natural world. This is the second type of calm delivered by the cogito—a reprieve from the onus of pinpointing the metaphysical source and direction of our existence. This has the overall effect of allowing peers of the scientific world divided by religious difference to embrace a shared perspective on metaphysics or the procedures necessary for inquiry. For Descartes, it is simply enough to state that God does exist and that he does not deceive us. This second form of calm is more historical in nature and has less connection to the aesthetic conversation at hand, but it is relevant to remark that Descartes' aim with the cogito was no mere performance of introspection, and that his hopes of creating common, calm grounds for his peers can be easily grasped.³ Having established two of Descartes' aims for *Meditations*, we now turn to an evaluation of the cogito as a decorous performance.

The idea of the cogito as performance originated with Finnish philosopher Jaakko Hintikka in his 1962 article *Cogito, Ergo Sum: Inference or Performance?* In the discussion

below I expand Hintikka's argument to develop a broader grasp of the operational effects of the cogito. I will argue that Descartes' intentions are to establish criteria of decorum (properness) as essential for rational thinking. Hintikka's own work ends at the idea of the cogito as a performance, but he fails to address the intention and repercussions of the performance. I will extend Hintikka's argument by examining the intended audience for the cogito and what the implications are for that audience. *Rules* and *Meditations* both contain an implicit appeal to others in his profession to reproduce his meditation for themselves in order to achieve a proper initial state for reason to work from. If we combine this appeal with Hintikka's suggested reading of the cogito as performance, the cogito now becomes a ritual of decorum.

Hintikka opens his essay with an examination of the label of "dictum" that has traditionally been assigned to the Cogito. Dictums are generally statements pronounced by some authoritative figure declaring a directive or governing law. Hintikka's aim is to look beyond the cogito as a pronouncement made for the benefit of oneself or one's cognitive process. He views it as a statement given to a broader audience of inquirers. While reading the cogito as a dictum does not preclude Descartes' fellow natural philosophers from our understanding of the statement, it supports the idea that Descartes might have stated the cogito as an authoritative end to the question of one's own existence—a commanding voice speaking to lesser thinkers. Yet if a dictum is what Descartes intended, Hintikka asks, then why lead the reader through the meditation that arrives at the cogito at all? His answer is because the writing clarifies Descartes' own thoughts for himself:

In a special case a self-defeating attempt of this kind can be made without saying or writing anything or doing anything comparable. In trying to make others believe something I must normally do something which can be heard or seen or

felt. But in trying to make myself believe something there is no need to say anything aloud or to write anything on paper. The performance through which existential inconsistency arises can in this case be merely an attempt to think-more accurately, an attempt to make oneself believe-that one does not exist.

(Hintikka 12)

Hintikka writes his observations of the cogito as if to declare solipsistic intentions on behalf of Descartes. However, if one understands the cogito as delivering a therapeutic calm to the thinking being, as well as having the intention of improving future performances of rational meditation, then any accusations of solipsism can be rendered moot as both of those intentions require participation from others. The cogito is directed not solely towards Descartes, but to all those participating as peers in the scientific community. *Meditations* and *Discourse on Method* constitute scripts from which those community members are invited to re-enact those same cognitive processes. Hintikka's evaluation of the cogito-as-performance does not go beyond the terms of an introspective act that clarifies one's own conclusions. I expand this evaluation so that we may consider the intended audience of the cogito. It must be recalled that the broader aim of Descartes' philosophical texts was to draw order to a chaotic community. This is evidenced in the introductions to both *Rules for the Direction of the Mind*⁴ and *Discourse on Method*.⁵ Descartes calls upon a community to compose their inquiries and their communications in such a way that offers the most clarity and distinction. In short these texts—works that Descartes explicitly intended for setting criteria for scientific inquiry—also direct one on how to properly (or decorously) set the stage for reason and logical communication between thinkers.

The idea of decorum needs clarification for a proper understanding of my expansion of Hintikka's ideas. Decorum is a concept of appropriateness whose importance for aesthetics is

underscored in Aristotle's *Poetics* and Horace's *Ars Poetica*. The idea of decorum presupposes a common sense of good taste among members of society. Judgements that some things are appropriate and that others are not in given situations are also encompassed by decorum. Theatrical decorum is of particular interest to our discussion as it relates to the idea of properly "setting the stage." The classic examples of theatrical decorum typically reference consistency with what one would find natural and agreeable.⁶ Horace, for example, warns against the assigning of the part of an old man to a young boy.⁷ He urges poets to keep their audience in mind at all times, and advises them to "invent consistently." Connecting Descartes to theatrical concepts is not difficult as his own writings often reference the theater of the mind and state that the performance of reason occurs within the theater of the mind. At the very beginning of his philosophy Descartes is relying on a notion that is deeply embedded in a concept relevant to classical theater that was experiencing a revival during his lifetime. A resurgence of interest in classical ideas of decorum marked much of the literature and theater during the mid-seventeenth century. A particular emphasis of the concept's theatrical tradition is placed on what actions are suitable for center stage. That is to say, that there is not a restriction on what action and movements can occur. It is that there should be a mindfulness about what actions are shown and communicated centrally to the audience.

Aesthetically speaking, decorum is rooted in the same idea of repugnance that Descartes mentions in *Meditations*. One finds displeasure when something is out of the bounds of appropriateness. For example, it is a breach of theatrical decorum if a stately character speaks or behaves as a lowly character would. One would be off-put, or repelled by the impropriety. This parallels the repugnance of a breach of clarity or distinction for one's reason. By using the word repugnance, Descartes implies that if we see someone thinking "I am thinking," but does not

follow it with “I am,” the same sense of repugnance is produced. Descartes’ own intentions with the cogito echo that of theatrical decorum. It should be understood that this sense of decorum was not to hinder or even direct the free play of cognition as a free and willful agent. Rather it places emphasis on directing one’s inquiries towards what can be clearly and distinctly communicated to fellow natural philosophers so that this sense of displeasure can be avoided. The emphasis is on the clarity and distinction (both qualitative concepts) of that which is performed on the properly set stage of discourse.

Descartes introduces a social concern for the individual thinker. In order to properly situate a performance, one must avoid that which could potentially produce repugnance. The individual thinker must be able to clearly follow her own processes when arriving at conclusions and propositions. This is not only to avoid this repugnance for herself, but to avoid producing it for others. In essence, one knows a proposition or conclusion makes sense for you when you can imagine it will make sense for others. Descartes’ notion of the subjective is more social than it is given credit for. Descartes is usually associated with subjective individualism, but in this reading of the cogito it is clear that while the individual may be isolated in the theater of the mind, the performances of reason must be set forth in such a way that may be reproduced decorously for the reason of others.

The social aspects of the cogito as an aesthetically grounded performance that is intended to unite a community of peers are visually imagined by Joseph Wright of Derby’s ⁸Science Paintings. Works of art that are interested in Cartesian discourse, such as Wright’s, manage to connect Descartes’ mode of epistemology with other, more directly aesthetic modes of knowledge. As we shall discuss in depth in Chapter 4, Wright’s paintings placed scientists in a community of peers and non-peers (those who are more spectator or witness to scientific

practice). Wright adds to the political discourse of science by including the presence of those whom, during his time, would not readily have been understood as “contributors” to the scientific discussion. In each of the six Science paintings Wright includes those who are observing the work at hand, and yet not immediately participating. In doing so Wright is drawing attention to the fact that the scientific community is itself a specialized part of a larger, stratified, society. Simply put, he visually notes that there are those who are clearly included in the conversation, as well as those who merely observe the conversation.

Descartes presents the cogito as the result of performative meditation given to a community of rational minds that must communicate with each other within the bounds of this foundational tenet—a tenet normalized by the ritualized meditation upon the implication of hyperbolic doubt that others in the community are invited to perform for themselves. There is an implicit reference to aesthetics underlying the project of establishing the proper foundations for scientific discourse. This foundation of the cogito serves to secure the limits of inquiry and conversation, and thus preliminarily to establish the appropriate “taste” of discourse. Descartes has established a rule that it is *distasteful* (recall his own use of the world repugnant from above) to think that a subject could think without also recognizing that it existed. To do so is not impossible, but is outside the bounds of good form.

However with this exercise of working through that which is doubtful, Descartes implicitly marginalizes aesthetics in a manner that belies its important role in his own processes. Ironically, most of the later articulations of aesthetics implicitly build upon Descartes’ pillars, revealing a relationship between Cartesianism and aesthetics that he did not anticipate. From the unified starting point of the cogito, Descartes asks the next question: Now that you know that you exist, what is of you and what is not of you? The imperative to distinguish what is of oneself

(including biases, affects, prescribed and ascribed conditions, etc.) allows one to determine the borders between oneself and the natural world, and more importantly, how one's own cognition can influence our understanding of the natural world.

Dualism as a Practical Concept

Dualism is the most contentious of the four pillars and has received the most renovations since Descartes' time. In this respect, the advantages of an operational approach to the Cartesian paradigm are the most evident. I make the argument that mind body dualism is operationally about determining what is of oneself and what is not of oneself. Dualism, as it exists today, is a cognitive practice predicated on the principle established in the first pillar, that of the cogito. Paired together, dualism and the cogito encompass the subjective aspects of the Cartesian paradigm. With the cogito, the thinker has been placed within the theater of the mind and existence (metaphysical and physical) has been confirmed. Dualism then allows the thinker to establish the boundaries between herself and the world around her. What is more is that dualism allows the thinker to identify the various lenses (biases) that color her perspectives on truth. The identification, study, and expression of those lenses have led to an entirely new approach to the search for truth—subjective philosophy. Subjective philosophy is most often portrayed as oppositional to Cartesian philosophy. Fleshing out dualism, and Descartes' intentions for dualism, helps to clarify why the influence of this pillar is particularly deep and (perhaps surprisingly) continues today.

Dualism is first described in the Sixth Meditation, and sketched out further in *Passions of the Soul* (1649) and in the lesser-known anatomical sketch, *The Description of the Human Body* (1647). Descartes' body-as-sensing-machine concept allows for a clear divide between thinking

and physical being. In both the rational realm and the physical realm there are objects that are presented to the thinker. Those objects are divided into two categories: *res cogitans* and *res extensa* (things of the cognition and things of the senses). This split is what determines what is clear and certain. In a practical stance that has been adopted by most philosophers working from the Cartesian paradigm, the tacit rule is as follows: If an object is determined to be of *res cogitans* it is considered truer than objects of *res extensa*, as the senses are the source of frequent deception and confusion. Working from this principle, most philosophers following the Cartesian tradition favor “objective” pursuits— the fields of physics, mathematics, and biology, as examples, tend to be those most readily associated with the Cartesian paradigm. What has been left unsaid in Western philosophy, until now, is that the search for objective truth via this process of divorcing subject and object, constitutes the very process by which Western philosophy has identified subjective truths.

The function of dualism parallels the function of the object/subject divide by the means of defining what could influence or deceive one’s reason. Descartes’ goal with dualism was to eliminate the lenses of subjectivity so that one may clearly and distinctly see what was objective. However, in order to eliminate the lenses, one must first identify and understand them. The process of identifying the various lenses has blossomed into what is known today as the broader philosophical concept of subjectivity. Subjective discourse focuses more on those lenses that are so deeply ingrained that they may not even be eliminated, only understood.

Moreover, the study of subjectivity and its functions, limitations, and circumstances are the basis of nearly every modern school of aesthetic philosophy. In a later section of this chapter, we will delve deeper into the connections between subjectivity and aesthetic discourse. But in brief, aesthetic and artistic movements such as post-colonialism, feminist art, and modernism all

are predicated on the practice of sorting out what is objectively true and what is subjectively true. Kant's views on the *sensus communus*, for example, identify the aesthetic lens of common taste and allow one to examine the functions and effects of the social codification of taste. Kant is one (arguably the first after Descartes) among many in a network of philosophers working to hone in on particular aspect of human existence so that they may better differentiate between objective and subjective truths. As a more contemporary example, let us recall Judith Butler whose work aims to dislodge gender from an objective, biological pigeonhole and to investigate the aesthetic performances that convey gender. Both Kant and Butler's discourses work operationally in accordance with Descartes' intentions for dualism. While the underlying principles of dualism and subjectivity are different—one is a physically-based schema that aids in cognition, the other is an epistemological categorization—they can be understood as serving the same function in our times. This operational parallelism answers the question as to why dualism would be considered a pillar at all. If the literal meaning has been debunked and an entirely new term (subjectivity) has replaced it, then why include dualism in the four pillars? Simply put, it is because the spirit of what Descartes intended with dualism—to identify what is of oneself and what is not of oneself—is still today the driving principle of so much of Western philosophy, particularly that of aesthetics.

It must be stated that my intention is not to revive Descartes' ontological or scientific arguments regarding dualism. Descartes intended mind/body dualism in the most literal sense. He truly believed the thinking being to be completely independent from her physical body. In our time, the field of neuroscience has debunked this reading of dualism. The overwhelming evidence supports mind and body as connected in ways that are still largely beyond our understanding. Yet when we approach dualism operationally, we find that Descartes' concept of

the mind (both brain and mental function) as the seat of the individual has not waived over time. The overall concept remains the same in both anatomical and philosophical discourse. Nor have we abandoned the stripping away of subjective lenses from our data gathering processes. What has largely been eschewed since Descartes' time is the idea that the workings of the body and emotions cannot or do not inform reason, particularly the workings of sensation. While scientists still do not equate sensation with "truth"—that is to say sensation is still known to be deceptive—they do now understand that sensations, particularly strong aesthetic sensations, are linked to much more than Descartes anticipated. Antonio Damasio elegantly crystalizes the modern take on Descartes' views:

This is Descartes' error: the abyssal separation between body and mind, between the sizable, dimensioned, mechanically operated, infinitely divisible body stuff, on the one hand, and the unsizable, undimensioned, un-pushpullable, nondivisible mind stuff; the suggestion that reasoning, and moral judgment, and the suffering that comes from physical pain or emotional upheaval might exist separately from the body. Specifically: the separation of the most refined operations of mind from the structure and operation of a biological organism. (249-50)

Aside from Damasio's biologically driven study of the brain's mechanism for reason versus emotions, G. Gabrielle Starr, in her recent book, *Feeling Beauty: the Neuroscience of Aesthetics*, addresses where the worlds of philosophy, epistemology, and neuroscience collide in reference to aesthetics. The newest imaging research shows evidence that the same portions of the brain that are active when new information is introduced via reading or other cognitive methods, are also active when a strong aesthetic experience is presented to the brain. Her research is conducted on the premise that the anatomical means of cognition (neuro-electrical

activity) and the “willful” or psychological means of cognition (the directives of the thinking self) are still to be separately observed, but are indeed tied together by various means. This separate understanding of the activities of the mind and brain is the next incarnation of mind/body dualism. Dualism encompasses multiple ideas such as the object/subjectivity, as well as the schematic (if not literal) separation of the mental functions and physical functions of the brain. As such it is still a useful means of contextualizing the discussions at hand.

Mechanistic World View

The cogito and dualism pair together, both as guiding principles and practical stances that establish a paradigm of the self. Descartes also established a second pair of pillars that schematize the objective world—specifically the objective world as observed by thinking beings. The guiding principle regarding objective truths is Descartes’ idea that the world is structured like a machine. Descartes believed that all matter was interactively correlated, like cogs in a clock-work mechanism. The whole of this mechanism comprises the natural world. All matter, including the matter of the human body behaves in accordance to purpose and physical law, according to the mechanistic worldview.



More than a view of the natural world, Descartes' mechanistic worldview pertains to the human body and its experiences as well. In *Treatise on Man*, Descartes describes his views of the body: "I make the supposition that the body is nothing else but a statue or earthen machine, that God has willed to form entire, in order to make it as similar to us as is possible" (*Treatise* 1) Describing the various organs of the body as pumps, furnaces, etc. Descartes removes any mysticism associated with the body—a move that put him squarely at odds with Aristotelean schematics of human physiology. From this vantage point of the body as machine, the thinking being is able to materially, rather than spiritually, investigate human biology. This same viewpoint holds for the whole of the natural world, giving reason an initial means of understanding phenomena.

The mechanistic worldview is very much alive, as the sciences to this day approach research from statistical and mathematical standpoints. Interest in identifying patterns of occurrence, cyclical trends, likelihood of events, etc. are all contingent upon a mechanistic worldview that can be approached, understood, communicated, and codified by the rational mind. Descartes' developed the "apparatus concept" of *mathesis universalis* as a means of setting down this system of epistemology. In the grand history of epistemic scholarship, no other system for inquiry and conclusion has ever been so successful. Philosophically, the mechanistic worldview has received criticism in terms of the limitations of what can be called a mechanism. Questions as to whether a mechanism can evolve beyond its original purpose or design also arise. These criticisms, often paired with ethical questions about human will or the definitions of artificial intelligence, may be seen as prescient in light of how much science and technology today push the bounds of automation⁹, as well as human existence¹⁰. These questions, however, do not negate the mechanistic worldview. They instead expand upon it. As such, the mechanistic

worldview is overall the most prevalent and most useful contemporary means of enframing the world around us.

Descartes' mechanistic worldview has a practical value in relation to inquiries of the mind. It directs one's attentions towards metaphysics and physics (the most mechanistic and mathematically-compatible of the sciences). The preliminary understanding of the world as a mechanism makes attending to the mechanical (physical and functional) aspects of the object at hand an easy first step. If one can gain even a rudimentary understanding of physics and mathematics, then inquiry into further studies may be pursued with a "roadmap" of sorts in place. The thinker can then proceed from what is physical or material onwards to other characteristics such as function or causality. This has the effect of reinforcing the Cartesian "tree of knowledge" (discussed below in the section on *mathesis universalis*) as the most valid and accessible approach to understanding the world. In this epistemological schematic, Descartes posits that once knowledge of metaphysics and physics were solidified, knowledge of all other areas of life would then be made readily available to *res cogitan*. As stated in the above section on dualism, objects of *res cogitan* are deemed by Descartes as more true than other objects.

A simple case can be made that this particular pillar of the paradigm need not exclude aesthetics and the arts from its purview: If the world is mechanistic in nature, and aesthetics and the arts are a part of this world, then they *can* be understood. The "can" of this last statement was quickly developed into "should" by Kant. His argument, simply put, is that it behooves the thinker to understand any objects that it can identify, and that those objects may most usefully be understood in terms of purpose in the mechanistic world. For Kant, what "can" be done "should" be done not because it is a moral obligation, but because it is fruitful, useful, and conducive to reason. To see "purposiveness" (*Zweckmäßigkeit*) in the natural world is illuminating or

congenial to various sorts of human doing. But perceiving “purposiveness” in how the parts of nature fit together is not the same as seeing an overall purpose (*Zweck*)—such as glorification of God or redemption of humankind. From Kant’s perspective, reason cannot affirm purpose, though it infer “purposiveness” as a heuristic device to elements in a whole that is analyzed. Moreover, doing so is in practice useful for humans. Hence the slogan of the 3rd critique: “purposiveness without purpose” (*Zweckmäßigkeit ohne Zweck*).

It should be understood that for Kant purpose is not necessarily a “natural” characteristic of an object. In some cases it is a quality granted to an object by human perceptions and cognition alone. Thus Kant makes room for the human-making aspect of judgement. Kant connects cognition and practice by the function of judgement. The function of judgement is then connected with morality by the need for *sensus communis*, or communal sense of good taste. Judgements of taste are in this way given the ability to determine the success or failure (as a mechanistic view would so delineate) of a work of art. By granting such lofty significance to judgement (particularly those of taste), Kant has opened up a gateway to aesthetics that was quickly followed by those interested in aesthetic discourse (Hegel, Schiller, et al). To be brief, by determining judgement (including judgements of taste) as a supplement to pure and practical reason, he determined judgement to be purposeful. Its purpose is to inform us of what we might most usefully take as structuring the world as we perceive and experience it. For example, we cannot know through reason that history is moving toward a “kingdom of ends” (a world community in which all people are treated as ends in themselves rather than as just means to our ends), but we can know through practical reasons (ethics) that people should be so treated, and so it is useful for us to presuppose, as a regulative idea, that history is so moving, and to judge as though such movement were possible, actual, and desirable. In this sense, morality is introduced

into the paradigm for knowledge as a more immediate need. As such, Kant's views on aesthetics draw directly from Descartes' pillar of a mechanistic worldview. While Kant's aesthetic theory has undergone much criticism, the take-away that still holds true today is that as identifiable objects of study, the arts and aesthetics are just as worthy of the inquisitive gaze of reason as any other objects of study.

Mathesis Universalis

Having now established the first three pillars of the Cartesian paradigm that situate the self (the *cogito*) in reference to the self (its existence and boundaries as described by dualism), as well as a guiding principle for reason's inquiries into the world around it, we must discuss Descartes' practical approach to discerning what is revealed by the mechanistic worldview. *Mathesis universalis* is the most complex pillar, for it encompasses three major facets of epistemology:

- 1.) the knowledge at hand
- 2.) the means of testing and codifying that knowledge
- 3.) A proper mode of expressing that knowledge

Descartes' omission of aesthetic discourse from his paradigm generally most profoundly impacts how this last pillar is conceptualized and explicated. Moreover, this exclusion has been traditionally upheld by those philosophers working on similar projects (systems of universalized epistemology) after Descartes. I argue that this tradition of exclusion is an unnecessary consequence of the pillar, one that has influenced later epistemological schemas. Indeed so strong is the influence that it has kept scholars from recognizing how unnecessary the omission is.

To flesh out fully this concept we must begin by characterizing the type of knowledge Descartes expected to establish with *mathesis universalis*. As his own pursuits were rooted in natural philosophy (what we would now understand as the hard sciences) Descartes' primary interest would have been directed towards propositional knowledge. Recalling that the abstract objects of *res cogitans* are, for Descartes the most objective objects, it follows that the kind of propositions that are stated mathematically are ideal. Knowledge of the natural world, as it is full of material mechanisms highlighted by the third pillar, becomes idealized by Descartes as mathematicalized propositions. It was Descartes' belief that once the function, purpose, and cause of each mechanism in the natural world could be concretized by means beyond doubt, then knowledge of those mechanisms would inform reason. Once reason was tutored by such knowledge, it would then be able to pursue any other inquiries or tasks at hand including those addressing practical and ethical dilemmas. This expectation is predicated on the belief that the world, as mechanistic, is predictable and lawful—therefore human beings, as mechanisms, will also be so.

What is neglected with the idea of *mathesis universalis* are those types of knowledge that are not predicated on what is predictable and lawful, but still fit into the paradigm of a mechanistic worldview. Knowledge of the subjective aspects of human existence is one of the most significant types to be excluded. For each of the previous three pillars, I have shown clear connections to aesthetic discourse. The last pillar, *mathesis universalis*, is the pillar that has the most profound disconnection from aesthetics. The reasons are two-fold:

- 1.) Descartes did not intend for *mathesis universalis* to be about concepts beyond propositional knowledge

- 2.) Those who have inherited the project of universalizing knowledge by some means or other have largely maintained an exclusion of aesthetics, though they need not.

Beyond seeking the knowledge that this approach might gain, Descartes intended *mathesis universalis* to encompass the means by which reason tests the veracity of knowledge and the mode of expressing that knowledge to a broader society. This is evidenced by the fact that his writings on epistemology were always paired with writings on method and modalities of inquiry. The first appearance of *mathesis universalis* is in Rule IV of the manuscript for *Rules for the Direction of the Mind*—a text that went unpublished in Descartes’ lifetime, but gained popularity with European philosophers once Gottfried Leibniz obtained a copy of the manuscript from the sale of items from Descartes’ estate. Rule IV is one of over twenty rules that direct reason on scientific methodology and proofs. Thus, to define *mathesis universalis* as simply a method for acquiring discrete items of knowledge would be to remove it from the contexts of Descartes’ larger intentions and the role he saw “*mathesis*” playing in the realization of those intentions.

Most have interpreted Descartes’ preference for reason and the thinking mind to mean that all philosophical attentions should be given to the reduction of knowledge to mathematicalized expressions. Such reduction would exclude sensory data, and thus marginalizes concepts of taste, beauty, and quality. Stressing how important it was the scientific community unite under one universalized program of knowledge, Descartes requires a honing of the mind, but neglects to address a honing of the senses.

The Constitution of an Aesthetic Program

Before discussing how the Cartesian paradigm excludes aesthetics, we must define what an aesthetic program denotes. An aesthetic program refers to philosophical discourse that is concerned with relating truth, cognition, or practical concerns with one or more qualitative concepts. Many of these concepts are difficult to define clearly, and are often disputed, but for our purposes I will offer broadly accepted definitions. As I do so, it will become apparent that much of our contemporary understanding of aesthetics is dependent upon the Cartesian pillars, even though aesthetics is excluded from the paradigm they articulate.

It is difficult to reconstruct Descartes' original meaning without falling into anachronism. We are possessed of the knowledge of philosophers whose work would not have arisen but for the advent of Cartesian philosophy, but was not envisioned by it. In Chapter 3, we will address Descartes' explicit views on concepts we associate with aesthetics, though they are brief in articulation and generally undeveloped. Rather than attempt to recover what aesthetic concepts might have meant to Descartes, in these next sections I will focus instead on how much Western philosophical discourse about aesthetics presupposes and builds upon the Cartesian paradigm. First, however, some brief definitions of those concepts that comprise an aesthetic program need to be delineated. Of all the concepts that are germane to aesthetics, five stand out as most significant in reference to their connections to Descartes work: beauty, expression, subjectivity, sense perception, and judgment.

Beauty can be understood by two means: that which is good or that which is pleasurable. In Descartes' own time the ancient Greek concept of *kalos* was the most prevalent starting place for reflection on beauty. *Kalos* denotes a combination of pleasure, nobility, and goodness. The means by which one defines what is pleasurable, noble, and/or good are the subject of much debate. Some philosophers find harmony or perfection to be at the heart of the matter—Plato in

the *Republic* takes this stance—and others find steadfast ethical or moral convictions to be the source of beauty (this is Aristotle’s stance). As both philosophers’ beliefs about beauty disseminated into Western philosophy both pleasure and goodness became extricable from notions of beauty. This dual acceptance gave rise to a socially upheld concept whose habituation assumes the status of a “common sense”—a sense upheld by shared participation in a natural world in which reason-sense conjunctions were embedded. The natural world could not reach reason without the senses, however. This meant that, for Descartes, all representations of the natural world given to reason were tainted by a commerce with a “sense” in which socially naturalized concepts played crucial, but unacknowledged, roles. Further, Descartes associated existence in nature with susceptibility to the influence not just of socially normative concepts but also of our unreliable physical, perceptual senses. Both the senses and the constitution of one’s common sense are thus (and still to this day are) the cause of philosophical contention and irresolution. Descartes would have discounted aesthetic discourse, for he was aware that *socially upheld truths* are not necessarily *universal truths*. As universal truth was at the center of his focus, it is unsurprising that the concept of beauty was overlooked.

We move next to the aesthetic concept of expression. Expression warrants special attention as it is accorded a prominent place in the Cartesian paradigm already. The term expression can have two meanings in philosophical discourse—one referring to the statement of a given language at hand and the other referring to the specific conveyance of the matter, typically by an emotion, in non-linguistic forms. Simply put, expression can mean what you are stating or how you are stating it. Expression, in terms of an aesthetic program, most often refers to the idea of stating what is not readily communicable by language. Many philosophers interested in aesthetics have approached the concept of art as expression (sometimes referred to

as aesthetic expression). Benedetto Croce (1866-1952), as an example, believes aesthetic expression to be the means of expressing what is not yet intelligible to reason¹¹—an idea that is touted as oppositional to Descartes’ views on reason¹². However, Descartes’ ideas of what occurs before reason can process representations given to it were never elucidated during his lifetime. As such, this perceived opposition is only valid if one confines oneself to what Descartes said, literally, on the matter, as opposed to considering what, operationally, is put into play.

As it happens, Descartes was indeed very interested in expression beyond language, but his interests were aimed at epistemology. As discussed above, Descartes felt the most objective (and therefor, the truest) knowledge one could obtain was that which came from abstract reasoning. The “language” of mathematics offers a form of expression that is consistently abstract, is characteristically precise, and is easier to translate from person to person. It was naturally his preferred means of expressing truth. There is a certain tradition in post-Cartesian philosophy, discussed in Chapter 4, which continues to maintain that mathematics is the ideal means of expressing knowledge. However, the term *mathesis* does not mean mathematics. Derived from the Greek *manthano*, it means what can be known and what can be taught—in short, knowledge. *Mathesis universalis* translates to “universal knowledge” and I will in later sections demonstrate how philosophers since Descartes have chosen to interpret and pursue the project of creating universal knowledge. For the moment it is sufficient to say that mathematics has a reductive nature and its intangibility leaves much of the natural world beyond its purview. As Descartes’ interests were primarily aimed toward objective truths of the natural world, these shortcomings would not have been considered by him a hindrance. The reliance upon mathematics in the hard sciences persists today and it is difficult to imagine a better means of proving or disproving theory. That said, mathematics is an ill-suited language for expressing

qualitative and subjective data. Emotional reference, sense-experience, and subjective circumstances are beyond the purview of mathematic expression.

The next concept that needs defining for aesthetic programs is subjectivity. As discussed briefly above in the section on dualism, subjectivity refers to the idea that individuals may be possessed of truths that are unique to their own existence. The circumstances of one's own attitudes, experiences, language, and schematics of being all influence the appearance of truth. In post-Cartesian discourse, subjectivity becomes important to aesthetic discourse as the arts so often involve expressions of subjective aspects. This is so much the case that, in a move unforeseen by Descartes when establishing his four pillars, most modern thinkers understand subjectivity to be integral to aesthetic discourse. Subjectivity as a concept presupposes the Cartesian paradigm as it is dependent upon the concept of an object/subject dichotomy upheld by Descartes' mind/body dualism. This is the case because dualism (in relation to human nature) is implied by and homologous with the subject/object divide. What follows from the homology is that the rational mind is (or should be) characteristically objective and universal, as is the physical body—which for Descartes functions like a machine. The rational mind and the physical body are the common denominators of human existence and therefor are easily approached in this way. However, the impress of the body –via sensation and emotion—upon the mind creates mental activity that is subjective and particular. One's sensations, reactions, memories, etc. are characteristically individual. Seen in this way, aesthetics becomes the proper sphere of the subjective. In this way, we find aesthetics to be dependent upon the Cartesian paradigm, for it describes a realm of knowledge separate from Descartes' *mathesis universalis*. Once again we are seeing the limitations of Descartes' original epistemological paradigm as it has been traditionally, and erroneously, understood.

In part the error derives from Descartes' omissions. Descartes imagined the subjective realm of body and misperception as hindering reason in certain ways. He believed that erroneous sensations and traditions gave rise to fragmented, particularized forms of thinking. He felt that once universals were established, then the eventual study of subjective matters would be a question of categorical organization and labeling. We now objectively know that concepts such as race, gender, language, etc. are subjective qualities that shape reason in ways similar to the *a priori*. These concepts were not acknowledged as influential to one's thinking before Descartes' work and therefore the Cartesian notion of *mathesis universalis* also did not acknowledge them. Yet these are the very concepts that have found increasing consideration in aesthetic programs involving the subjective. Philosophers that are influential to the course of Western philosophy, such as Georg Wilhelm Friedrich Hegel, find the specificities of one's own existence (one's time in history, gender, native language, etc.) to be significantly influential on our views on beauty, morality, and even so far as to influence one's metaphysical understanding of the natural world.

Our fourth term related to subjectivity that often arises in aesthetic discourse is sense-perception, sometimes referred to as sense experience. The mechanisms of the senses and sensations in themselves can vary from person to person. More importantly, the senses can easily be fooled. This being the case, how can one establish truth by means of sense-perception? While debate has been carried out by empiricists and rationalists for centuries, another approach to sense perception was picked up on by Descartes—a mechanistic understanding of the processes by which the physical body feeds information into the theater of the mind. The level to which one trusts sense perception and the many ways by which it can vary from person to person is a matter whose conceptualization is closely tied to Descartes' mechanistic world-view. If the world is clock-work, and the body a machine within that clockwork, then the differences

between senses and the means of deception of those senses can be understood in terms of that same clock-work. Thus Descartes, and many of his contemporaries and philosophical-descendants, chose to occupy their time studying the most prevalent of the human senses—the sense of sight or optics. The visual sense is given special priority by Descartes as he included a special treatment of the subject (the *Dioptrics*) in his *Discourse on Method*. As *Discourse* is the text in which Descartes set down his methodology for scientific inquiry and his epistemological schemas, Descartes concerned himself largely with the mechanisms at play in visual sensation (how the information outside was making its way inside the mind). Though the theories on the substance of light developed in the *Dioptrics* has proven to be inaccurate, the fact remains that Descartes innately understood that the visual sense is significant to the development of knowledge.

The final concept we must explore to properly understand aesthetic programs is judgement. It is difficult to approach the topic of Descartes and judgement with referencing Immanuel Kant. As we discuss Kant and his ideas about judgment it is important to bear in mind that he is considered one of the most (if not the most) significant “disciples” of the Cartesian paradigm. Descartes’ work on the subjects of reason, scientific theory, and of course the four pillars discussed above are foundational to Kantian philosophy. This being the case, I devote the next entire section to the connections between Descartes, Kant, and the concept of judgement.

Kant’s Aesthetics and Their Relationship to the Cartesian Paradigm

By the time Kant had published his critiques, Descartes’ own work had garnered much controversy and received academic rejection. It is generally acknowledged that Kant, while not rejecting Descartes outright, makes some significant moves away from the original premises of

the Cartesian paradigm. Kant perceived Cartesian skepticism as problematic as it denied the value of sense experience. Via the three critiques, he established a means to reconcile what is typically perceived as the “Cartesian problem”—the discordance between sense and reason. Kant establishes that the mind is possessed of inherent structures that rule over the perceptions of the senses as well as those of reason. Thus the mind (reason) and the senses are necessary to establish the truths of the mechanistic world. But Kant does not grant us a full grasp of these truths, and states the “things in themselves” (noumena) are untenable in the mind, and only the representations of things in themselves (phenomena) are truly available to both the mind and senses.

Kant’s paradigm provides a unique space for judgment, granting it an intermediary role between reason and the senses—effectively creating a bridge between mind and body that does not negate Descartes’ stance that we experience life through dualism. Simply put, Kant determines judgement to be a qualitative concept involving a distinct sense of discernment that includes aesthetic evaluation. The aesthetic elements of judgement take two primary modalities—the analysis of the beautiful and the experience of the sublime. The third critique includes analytics of both modes—concepts that are certainly more subjective than judgements concerning truths about the natural world. The inclusion of these two analytics opened philosophic discourse for aesthetic concepts and their relationship to morality. Kant’s efforts to fully encompass all aspects of judgement are in keeping with the Cartesian paradigm as they are working form a universal model and enter into speculative teleological reasoning, which conveys a mechanistic worldview. Kant’s introduction of the concept of judgement to the separated realms of sense and reason is a first step towards acknowledging a “human making” aspect to the establishment of truths.

If reason is separate from sensation and requires judgement to negotiate between the two—and we acknowledge that judgement is a skill that is shaped by a specific *sensus communus*—then it logically follows that the truths established in this manner are in some ways “human made.” In terms of our discussion of aesthetics and the Cartesian paradigm, this is the most significant divergence from Descartes’ original conception of the paradigm. However this divergence does not negate the four pillars of the paradigm in any way. A thinking being can still work from the fundamental fact of their existence (the cogito), can accept that the world is mechanistic and objective in nature, can accept that knowledge can be universally codified and communicated, and can understand that in order to generate that knowledge one must establish the boundaries of object and subject (dualism). The introduction of judgement simply adds an awareness of some of the subjective factors at play in the establishment of knowledge.

The Arts and Knowledge

To conclude this chapter, a brief discussion about the relationships between art, aesthetics, and epistemology is warranted. Art in itself is separate from aesthetics, but is a particular concern for aesthetic programs. Some charge aesthetics with the task of defining what art is while others would argue that experience of art must inform aesthetic discourse, and so come prior to it. Simply put, the arts can either be considered the cause of an aesthetic program or the subject of critique of an aesthetic program. Each one of these aspects has direct ties to the models of truth and knowledge, making an aesthetic program germane to discussions of epistemology (knowledge). As knowledge is also a subject with disputed definitions, this avenue too presents difficulties for understanding precisely what is at stake in an aesthetic program. For

our purposes it is simplest to state that aesthetic programs relate to knowledge in an informative manner that can move in one of two dynamics:

- 1.) From a specific group's (philosophic, social, historical etc.) broader philosophic stances towards evaluations and interpretations of individual artworks, or
- 2.) Artworks that move towards the themes, questions, and stakes of broader aesthetic principles that pertain to a philosophic movement.

Both dynamics address concepts of beauty, expression, subjectivity, sense perception, and judgment. This dissertation will work largely from the former (discourse informing the arts), but will address the latter (the arts informing discourse) in the fourth chapter on the work of Joseph Wright of Derby.

It must be stated that the term "aesthetics" did not properly enter philosophic discourse until the mid-eighteenth century with the work of Alexander Baumgarten. It would be anachronistic to think that a philosopher working in the seventeenth century such as Descartes could have conceived of a full-fledged aesthetic program. However it is also illogical to assume that aesthetic concepts were not addressed at all. Nor does it stand that Descartes would oppose the consideration of aesthetic concepts. In Chapter 3, we will discuss in depth Descartes' implied conceptions of beauty, the soul, and expression, as these three aspects of an aesthetic program are in small ways directly addressed by Cartesian texts.

This first chapter contextualizes the discussion of the next by legitimizing aesthetics as a concern for Descartes and his "descendants." I argue that the traditional exclusion of aesthetics from Cartesian discourse is unnecessary and in no way fundamental to the operations of the Cartesian paradigm. Inversely, I argue that there is no need to reject or exclude Cartesian discourse from aesthetic discussions. In the next chapter, I evaluate the secondary literature and

adjacent philosophic discussions concerning Descartes and aesthetics. In so doing, I will show that the traditional understanding of the Cartesian paradigm as disinclined towards aesthetics comes from one of two views on the matter:

- 1.) Descartes unwittingly omitted aesthetics and the subjective studies¹³ from his program.
- 2.) He purposefully excluded such subject matters from his work.

My own view is that Descartes' omission is only evident in hindsight by those aware of the subjective studies as they have grown into the modern consciousness since the advent of the Cartesian paradigm. This leads me to understand that had aesthetics been a subject matter at all during Descartes' time, he would most certainly have addressed aesthetic concepts if for no other reason than he was working towards the universalization of *all* knowledge. As Descartes himself did not define his own concepts of beauty and expression as they relate to truth, we must take not a literal, but an operational stance when working to fill the aesthetic void left in the paradigm. The next chapter delves into the work of several scholars who have also taken note of Descartes' omission.

CHAPTER 2

Connecting Descartes to Aesthetics

It is typical for philosophic discourse to examine the various “conversations” connected to a given philosopher, as philosophy is not understood as *ex nihilo* discourse, but as revealing dialogue among thinkers. Although this dissertation examines one philosopher so closely, I would be remiss in not addressing those predecessors who influenced Descartes, secondary literature concerning the Cartesian paradigm, and the work of philosophers who wrote in opposition to the paradigm. First I will investigate the relationship between Descartes’ philosophy and the work that variously influenced it. Second, I will introduce three contemporary works that invite Descartes’ work and aesthetic discourse into direct dialogue. Third, and last, I will discuss those who are generally viewed as Descartes’ largest philosophic opponents.

It is generally accepted that St Augustine, Plato, and Aristotle are chief among those Descartes’ work most directly answers. In the first section of this chapter, I discuss each of these influences, highlighting how the lack of attention Descartes gives to aesthetics makes him an outlier among his fellow philosophers. His omission of aesthetics and the arts takes on a particular significance when one considers that each of the major philosophical influences upon him gave considerable attention to aesthetic concepts. In the second section, I review three articles that offer new points for consideration when tying the Cartesian paradigm to aesthetics by various means. Collectively these essays are a part of a contemporary reconsideration of Descartes’ work that enriches our own discussion of Descartes’ neglect of aesthetics in his account of knowledge. In the last section, it will be made evident that the grounds upon which

later thinkers rejected the Cartesian paradigm were deeply affiliated with rejection of Descartes' choice of omitting considerations of aesthetic and qualitative value from his paradigm of knowledge-acquisition and assessment.

The Aesthetic Positions of Descartes' Influences

The centrality of questions related to aesthetics (questions of quality, beauty, and assessment of art) to Descartes' most significant predecessors makes his lack of interest in those subjects all the more remarkable. Beauty, in particular, plays a key role for each of these men in their treatments of the well-being of the soul. As the work of the three philosophers discussed here is so important to Western philosophy that they rightly have had entire libraries devoted to their philosophic works, I will keep expositions on their views brief and germane to this dissertation.

Each of the philosophical currents that Descartes draws from (Classical and Augustinian philosophy) contain schemas that address, and in some cases establish, aesthetic concepts for Western philosophy. This would have provided Descartes with ample reason to have developed his own approach to aesthetics. I will demonstrate how he shifts the schemas developed by his predecessors in directions that generate the possibility of modern philosophical discourses on aesthetics, despite his own neglect of the aesthetic-relevant aspects of the discourse of his predecessors. I will reserve for chapter 3 in-depth discussions of how concepts such as mimesis for Plato and significant forms in Aristotle—concepts that are generally understood as underpinning anti-aesthetic discourse—lose credence once Descartes fleshes out the four pillars of his paradigm. Now, however, I will offer a brief overview that serves the dual purpose of situating Descartes as a participant within the grander conversation of philosophy, and of

illustrating how his own contributions alter the understandings of concepts inherited from classical thought.

Most of the secondary literature that connects Descartes to Classical-era philosophers is centered upon Descartes' rejection of scholasticism and old models of cognition. Names such as Plato, Aristotle, and Augustine inevitably arise, and the overall goal of these commentaries is to determine which pieces of the old philosophy he kept, modified, or dismissed.¹⁴ However, commentary seldom notes that while each of the three most important philosophical influences upon Descartes gave considerable attention to aesthetic concepts, he himself chose to remain largely mute on that subject. Augustine, as will be discussed further below, viewed beauty as a purely objective and measurable quality that originates with God. Since Descartes' interests largely targeted objective truths, (though his idea of objectivity differs greatly from Augustine), it is curious that he did not generate his own set of characteristics, or indeed refer to any characteristics of beauty. Descartes' omission of matters relating to aesthetics could conceivably be attributed to his general focus on the natural sciences; however, he drew heavily upon Classical antiquity's two major philosophers when he devised his own model of the soul. The Cartesian model reflects similar concerns to those of Plato and Aristotle, but while both Plato and Aristotle were compelled to address aesthetics in relation to the well-being of the soul, Descartes only mentions such things in passing in his own personal correspondence.

Augustine and Descartes

Augustine (354-430 AD) figures as one of the most important influences upon Cartesian theory, if not by direct means. As Margaret Wilson notes in her article "Descartes and Augustine," Descartes denied any prior knowledge of Augustine's work whenever others pointed

out similarities between its claims and his own. However, as Augustinian thought permeated discourse in the West for the thousand years preceding Descartes' own lifetime, it is hardly credible that Descartes would not have been at least well-acquainted with the broad outlines of Augustinian philosophy, even if he never read any primary Augustinian texts.

Augustine's complex views on the natural world, the soul, and beauty, though developed over numerous texts, reveal a persistent and enduring interest in aesthetic concepts. He viewed the world as originating with God, and felt it was best to view nature from as near to God's viewpoint as possible. As a consequence, he developed a unique way of objectifying the world that did not entirely dismiss Plato's idealism, but still complied with Catholic doctrine. He uses the term *divine illumination* to refer to a kind of objectification predicated upon viewing the natural world to be a product of God's will. Consequently any genuine or full knowledge of the world was contingent, for Augustine, upon God's grace. As all things are objects of creation, they possess only objective characteristics. Beauty, as a substance, is no exception. For Augustine, an object is beautiful if it has unity, rhythm, is proportional and symmetrical, and is in due order.¹⁵ Each of these qualities can be clearly and distinctly determined, and therefore are not subjective in nature.

As beauty is an objective substance for Augustine (just as an object can be red, heavy, or soft it can also be beautiful), so our interaction with beauty will also be objective. In order to hone your idea of the beautiful, you come to see it as an attribute of the divine—by communing with the divine, one communes with the beautiful. However the inverse is not true for Augustine. Communing with what is perceived as beautiful does not assure one of communion with the divine. Too often we attribute the characteristic to a substance (Augustine uses the example of a beautiful woman) without understanding that beauty as substance (comprised of the

characteristics listed above) is separate from the woman but not separate from God. In this way, Augustine, like Plato before him, felt beauty could potentially be a trap—misdirecting one away from the path to God. This danger largely applies to sensual beauty, which is apt to manifest itself in ways apart from or beyond the mathematicalized relations by which beauty as harmony should be determined: one may have these qualities of harmony and sweetness in body, but not soul, and one's having them in soul is a pale imitation of how the pious realize them and how God exemplifies them.¹⁶

Descartes' own preference for things that are “clear and distinct” as well as his focus on those objects that are easily mastered by means of mathematics appear to be informed by and valorize the very criteria championed by Augustine. Indeed, Augustine's conception of unity (that which is whole and distinct) and of “due order” can be viewed as the same as, or co-extensive with, that which is clear to the mind—that in which no parts of the whole are out of harmony or due proportion with others.

Plato and Descartes

Descartes, like Plato, is leery of what will confuse the soul and attributes confusion to sensorial deception. However, as we will discuss later, what Descartes believes can potentially confuse the soul is markedly different from what Plato postulates. Plato worked to establish the clear and distinct Ideal Forms (*eidos*) as the measure of all things. He understood all units of perception to have degrees of separation from the Ideal. Each successive step away from the ideal warranted incrementally less credence. Like Plato, Descartes worked to isolate objective¹⁷ truths with clarity and distinction, and he felt that every step away from objectivity only increased confusion. The difference is that Descartes' work seeks out *representations* of truths

that could be easily grasped by the mind, while Platonic theory takes up the characteristics of truth as its goal. Descartes abandons the project of possessing knowledge beyond what can be *represented* to reason. Instead, he devotes his attentions to the clarification of representation-mediated knowledge, the dissemination of such knowledge, and the perfection of the modes by which it might be expressed. He in effect shuns the desire to possess *eidos* in favor of enriching the quality of that which can be known through engagement with the natural world. What replaces the *eidos* for Descartes are concepts that he takes to be innate to the thinking subject. These bases of cognition are, for Descartes, the true “things in themselves.” As such they are to be applied to the representations of the natural world. Those representations are apprehended within the theater of the mind. In this way, what is rational is applied to what is natural, as opposed to the Platonic model, where the ideal is applied to the natural.¹⁸

Rather than taking philosophical inquiry to be a means of “stepping closer” to unattainable and divine truth, Descartes sought to make it a vehicle for *expanding and improving the quality* of those truths that could be grasped by the thinking mind. Descartes was insistent that we should pursue that which is clear and distinct. Those are both qualitative characteristics. It can easily be understood that Descartes intended to improve the pursuit of, the codification of, and the communication of knowledge by his insistence that the thinking mind must work with the structures already present within it. That improving the quality of knowledge was a central motivation for Descartes is not at all conjecture. It is a documented intention made explicitly in the first statements of *Rules*¹⁹. By noting the importance of this goal in organizing Descartes’ project, we are led to see how an implied aesthetic program, despite the absence of a conscious intention on his part, might arise from the forms of thinking his work sets in motion. If one understands the Cartesian paradigm as a campaign of qualitative improvements, then a need to

develop fully the definitions of those qualities is imperative. This being the case, we may understand how the elaboration of a Cartesian aesthetic program might contribute to the goal of improving clarity and distinctiveness of knowledge.

Moreover, Descartes' projects for improving the quality of knowledge involves moving beyond previous limitations imposed upon qualitative concepts by his predecessors. Instead of focusing on finding airtight definitions for concepts such as beauty, he makes an ideal of open-ended expansion of capacities for the discernment of beauty. For Descartes, beauty could not only be a matter of comparison to ideals, but also would need to be a matter of discernment on the part of the thinking subject.

Most interestingly, Plato also alludes to the importance of discernment (judgement), but still in relation to hierarchies and ideals. Throughout *The Republic*, Plato describes certain kinds of poetry and imitation as facilitating the soul's harmony and others as disrupting and confusing to the soul. Because Plato discounts the possibility that poetic expression may foster originality and so new knowledge, his discussions of poetics are limited to considerations of the imitation of ideal forms and the goodness of the imitators. In Book III of *The Republic* (398a-b), Plato describes poetry as potentially valuable, but only when it depicts a good man imitating other good men, as this would not require the actor to know more than himself:

It seems, then, that if a man, who through clever training can become anything and imitate anything should arrive in our city, wanting to give a performance of his poems, we should bow down before him as someone holy, wonderful, and pleasing, but we should pour myrrh on his head, crown him with wreaths, and send him away to another city. But, for our own good, we ourselves should employ a more austere and less pleasure-giving poet and storyteller, one who

would imitate the speech of a decent person and who would tell his stories in accordance with the patterns we laid down when we first undertook the education of our soldiers (74).

Plato's argument in the above passage is that, since only a god could rightly discern what is good in multiple fields, or in all of them, when people seem able to do this (as with the versatile poet) they are frauds, and dangerous ones. Descartes' paradigm moves away from Ideals and divine hierarchies, redirecting one's discernment towards the objects at hand rather than the propriety or fidelity of particular artistic representations of a field or a person judging on the basis of expert knowledge. Reason must work to understand and judge only the objects presented to it as objects. Descartes' radicalized individualism (the Cogito and dualism) liberate the soul from the need to identify objects as nearer or further from goodness. More simply, cognition is now to understand objects as either clear or unclear. As Descartes saw no need for cognition to concern itself with artistic representations of knowledge or of knowledgeable people, the criteria for judgments was seen by him as unnecessary to develop. Perhaps this can account for Descartes' lack of interest in the discernment of "good" taste. But given all this, it is strange then that Descartes consistently calls for the preference of what is qualitatively clear and distinct in his methodological writings without providing aesthetic guidelines for what constitutes those qualities.

Aristotle and Descartes

Intrinsic in the Aristotelian modeling of the natural world is a certain relationship to the arts that is important to our discussion of Descartes' immediate influences. Dennis Des Chene touches on this relationship and its relevancy to Descartes briefly in the last section of his chapter

of the *Blackwell Companion to Descartes*, entitled “Aristotelian Natural Philosophy: Body, Cause, Nature.” After describing Aristotelian natural philosophy as it was in Descartes’ lifetime (that is to say as it had been added on to and changed by various scholars) Des Chene closes the chapter with a section on the relationship between art and nature. “Art, even though it is said to imitate nature, cannot serve as a model, because human production is by comparison with divine creation secondary, superficial, and subordinate” (29). Des Chene makes it clear that for Aristotle, the arts imitate nature, and are therefore secondary to nature. From this, Des Chene infers that the forms of art are not, for Aristotle, the substantial forms of things but only their figures (outward shapes) so they could be read by later commentators as superficial. Similarly, he concludes that, for early modern scholastic philosophers, nature’s powers are subordinate to God, while human industry is subordinate to both nature and God, so therefore art is subordinate to Nature. Des Chene closes the chapter with an important distinction between this understanding of Aristotelian natural philosophy and Descartes’ own understanding of the relationship to between art and nature:

In Descartes’ natural philosophy, the subordinate relationship of art to nature is not altogether rejected. But the difference between human and divine art no longer turns on the all-or-nothing presence or absence of generative powers. It is instead the difference between the finite and the indefinitely large, a difference in number and intricacy of parts. Human art is only accidentally, not essentially, subordinate to nature. The barrier between art and nature is thus displaced. Art is as one might say, that which is actually made in accordance with our desires; nature is that which is not, or which is only potentially so. (31)

From Descartes' relationship to Aristotelian natural philosophy we can infer a shift from concerns of mimetic modeling to a more porous border between natural and human made representations. Forms are all representational, and so what matters are not the characteristics on any particular representation, but rather how well the representation points one toward, or brings one closer to, the element of truth that is represented. If Descartes understood that man-made representations could be just as informative as fully natural representations, however, then there would be a natural space for the qualitative judgement of man-made representations. Though it is most probable that Descartes would have focused upon considering mathematical models in these terms, it is a natural "next step" that for images, poetics, etc., the characteristics of particular representations, to become subject to the same scrutiny.

Important to understanding Descartes' relationship to Aristotle is recognizing the shift between viewing objects, in an Aristotelean manner, as having *potentiality* to viewing objects, in a Cartesian manner, as having purpose in a mechanical model of "how things work." Briefly, potentiality refers to the idea of an object having a limited number of possible ways of existing in the world. *Actuality* refers to the means (the action) by which that object fulfills a specific possibility. These two concepts, in various forms, were upheld throughout medieval times until the advent of Descartes' four pillars. Most significantly the mechanistic worldview demands that one examine not the potentiality of an object, but the purpose of that object in terms of its utility within a larger structure. The questions shift from "what are the ways in which this object could exist and is this particular occurrence real and natural?"—important questions for Aristotle—to "what purpose does this object serve to the natural movements and laws of nature?" That said, the Aristotelean model of art-as-catharsis could still hold true in the Cartesian paradigm. Descartes' conception of the soul, explained in detail in the next chapter, requires occasional acts

of will overriding one's passions. Such acts typically involve a divorcing of oneself from emotions and affects. Catharsis could easily be one of those means. If Descartes maintained this idea of the arts, then it may be why he chose to ignore the topic—he simply understood it to be a long-ago solved problem. Yet his skepticism, mechanistic world view, and epistemological schema of universal knowledge present problems for the cathartic view of the arts. Questions of mechanism, universality, and efficacy arise. If an artwork does not universally, consistently, and verifiably provide catharsis, for all how can it be said to do so? What are the conditions that must exist before, during, and after catharsis? Are there other means of “righting” the soul that are more universally effective? All of these questions remain unexplored in Descartes.

Filling the Aesthetic Void

As I conducted my research for this dissertation a few common threads became evident. First that there is a need to connect subjective facts with universalized models of epistemology like Descartes'. Secondly, isolated quotes and extrapolations appear to be the typical mode for the latest commentaries connected with the Cartesian paradigm. Third, few scholars approach the topic operationally—this significantly limits their expositions and interpretations, as Descartes was largely silent on aesthetic matters. In this section I will present a series of works that have offered means of bridging the gap between Descartes' original work and concepts and/or new viewpoints bearing upon contemporary aesthetic matters.

Mathesis universalis, as Descartes originally presented the concept, was intended for the sciences—but Descartes understood the sciences to be all encompassing. That is to say, science would establish knowledge of the natural world and, eventually, knowledge pertaining to human existence. It was his understanding that the natural sciences would present—given a proper

ordered understanding of metaphysics, matter, mathematics, and then biology, all that is necessary for understanding the world around us. The glaring omissions are those areas of study germane to what I refer to as subjective facts. Subjective facts are characteristics like language, culture, history, aesthetics, and other sociological “sciences.” While it may have been evident to Descartes that universalized epistemology would need to encompass all languages (hence his heavy emphasis on mathematics), he had not considered the fact that universalized epistemology would need to encompass all genders, all classes, all countries of the globe. Nor had he considered the knowledge-shaping power of language in the same light as those working in socio-linguistics do today.

These points about subjective facts lead me to discuss a common approach in the contemporary literature about Descartes. Many scholars work to prove their cases by pulling small excerpts from Descartes’ original works and construing conclusions from the minutia. While this is certainly a safe means of proving one’s argument, it is also a largely tepid means of setting forth any practical philosophical discourse. By working through the Cartesian paradigm as an operational system upon which Western philosophy is founded and built up from, rather treating it as a collection of discrete philosophical claims, we can enrich our understanding of the Cartesian paradigm’s application to our own moment in time.

Of course there are many who would dismiss Descartes and other philosophers for their distinct white, male, and privileged views upon what the nature of universal entails. Even if one were to conclude that Descartes’ paradigm was classist, racist, sexist, or in other ways idiosyncratic, that does not preclude its continued value. It denotes required areas of renovation, most certainly. But that is the broader point of my working operationally rather than literally. We as contemporary thinkers must address the Cartesian paradigm in light of its shortcomings and

omissions by means of enrichment, rather than dismissive critique. We must do so simply because there is no returning to a time before Descartes.

As the purpose of this dissertation is primarily aimed at Descartes' omission of aesthetics, a field I understand to encompass qualitative concepts that inform all the social sciences, I will keep this chapter germane to those works that attempt to constructively connect Descartes' four pillars to concepts of qualitative concern. Overall we encounter a theme of trying to fill aesthetic voids in the paradigm, primarily the pillar of *mathesis universalis*. With these next two sections (The Body as a Sensing Machine, and Mood and Objectivity) I will show how the "literal" approach to adding qualitative considerations to the Cartesian paradigm works by discussing two efforts to draw upon primary Cartesian material to support revisionary arguments. Cecilia Sjoholm brings to light Descartes' concepts of sensation as a possible means to explore the relationship between Cartesian epistemology and aesthetics. Rene Rosfort and Giovanni Stranghellini offer Descartes' brief suggestions that mood influences reason as evidence that he had some awareness of the directive effect of mood upon reasoning. Concluding the review of contemporary commentary, I will consider Tamara Albertini's essay "Crisis and Certainty of Knowledge in Al-Ghazali (1058-1111) and Descartes (1596-1650)", which provides a fascinating comparison between two disparate philosophers—a comparison that reveals an inherent need to pursue subjective knowledge.

The Body as a Sensing Machine

Cecilia Sjoholm's article entitled "Descartes, Emotions and the Inner Life of the Subject" presents a discussion of *Passions of the Soul* that works to tie together aesthetics, epistemology, and the Cartesian paradigm. She provides the results of a thorough search through Descartes'

oeuvre, and notes many small allusions to poetics, the arts, literature, etc. Her essay gives evidence that Descartes had a certain level of awareness of poetry and literature (there is never a specific reference of paintings). What we can gain from Sjöholm is an understanding that Descartes did understand sensation to be an informative force for the presentation of material to the theater of the mind, and that he understood that factors such as habit (and mood, as we shall see next section) can be influential in shaping sensation's tenor and force.

To begin her essay, Sjöholm offers a quote by Descartes in which she refers to his view of the human body as an “aesthetic machine.” For the purpose of proper context, one must understand that while Descartes prioritized those concepts that were innate to the mind, he did not (and could not) isolate them as a lone means of cognition. He simply hierarchically idealized them as preferable. The workings of abstraction and reason are closest to those innate concepts, and therefore closest to his own most fundamental truth: *cogito ergo sum*. That said, the sensations of the body were not to be ignored, as to do so would be to ignore the purpose of the body all together. Corporeal sensation is necessary for the representation of the world to cognition. It is not, however, to be viewed as the confirming source of knowledge.

Sjöholm cites Eric R Koch's text *The Aesthetic Body: Passion, Sensibility, and Corporeality in Seventeenth Century Europe* in her discussion of the tentative connections between mind and body in Descartes' thought:

As Eric Koch has argued, Descartes implies that the way in which body and mind are connected depends on everyday life and the habits of a person. New habits affect the flow of the animal spirits. They influence the associations of ideas, which in turn affect the “aesthetic machine” of the physical, sensual, affective and thinking body. Descartes makes clear that perceptions—of which passions are one

kind—are corporally bound. In *The Passions*, the separation between mind and body is posited less as an ontological fact than as an aid to understanding their relations. (842)

Sjoholm acknowledges that while Descartes certainly was aware that sensation could affect cognition, the capability of cognition to recognize those affects allows for relieving the body of any influence on epistemology. She makes the following point later in the text: “*Meditations* reduces the body to an unreal and virtual status (esp 82-107). Through this ‘erasure’ and ‘dehumanization’ of the body it ceases to be an integral part of the definition and existence of the thinking subject” (108). Sjoholm connects Koch’s claim to *Passions* via the argument (as seen above) of if the body is of the practical and everyday, it may in turn influence the habits of a person and then physically be responsible for a different flow of the path of animal spirits. Along with the second claim that perceptions are corporeally bound, Sjoholm then makes the case that the separation of the mind and body is really only to be understood as a means to understand their relationship. Sjoholm illuminates Descartes’ understanding that cognition is innately capable of divorcing sensation from reason without rejecting the facts of sensation. His entire paradigm, however, operationally requires the thinking subject to willfully separate cognition from perception. *The Passions of the Soul* was intended as a means for the thinking individual to negotiate perception, emotion, and sensation—that is to say to recognize them as factual objects, not epistemological truths.

In order to analyze sensation’s operational role within the Cartesian paradigm, we must understand the separation of reason from sensation not as a complete dismissal of sensation. But at the same time we must understand the separation to be, paradoxically, what allows for the study of aesthetic theory at all. Beyond literal references, particularly in the interest of avoiding

anachronism, we must understand Descartes' meaning behind the term "aesthetic" did not contain reference to the arts, beauty, or qualitative concerns. His stance of recognizing sensations (which encompassed what he would have understood by the term "aesthetics") as factual objects rooted in reality and not simply deception, would lead philosophers who came after him to pick up the task of studying sensations. Of particular interest was the relationship of sensation to beauty, the arts, etc. which denote sensations as significant and influential subjective facts. Sjöholm's work gives us an initial, if not complete, means of understanding the Cartesian connection to some of our modern concepts of aesthetic philosophy.

Sjöholm observes that Koch, prior to his explanation of this phrase in terms of the Cartesian paradigm explains how both Augustine and Pascal both posit the body as a "sensing machine." The phrase of "sensing machine" is more accurate in terms of how all three of these original philosophers understood the body. While "sensing" is the physical task of taking in information (all information must be internalized by the one or more of the senses), the term "aesthetic" as Koch uses it cannot be associated with the mode of philosophy that concerns concepts such as truth, beauty, common taste, and expression. These matters for all three thinkers would be germane to cognition—that is to the thinking subject and not to the physical means by which the mind is presented with and then intakes information. What Descartes (and his many successors) posits by means of his overall operational and methodological framework, is that the senses, while necessary and certainly influential to the acquisition of information, cannot have say in the judgment of whether information so acquired is true or moral. Bearing this operational stance in mind helps us to avoid attempts to assemble a full aesthetic "space" out of the few loose quotes that Descartes' primary material offers us. The aesthetic program one might develop should instead be constructed on the backs of the work and history that has occurred since

Descartes' lifetime, though both that work and the history informing it are significantly shaped by the four pillars of Cartesian paradigm and their pivotal role in modern Western philosophy.

Mood and Objectivity

Like the childhood game of Telephone, interpretations and critiques of original philosophy often permit certain “grey” nuances of that philosophy to be colored over by reductive shades of black and white. The general perception of the Cartesian paradigm is that it maintains a rigid interest only in what may be perceived as objective and quantifiable. Aesthetic theory, as a field generally interested in more subjective concepts, seems an unlikely addition to the Cartesian paradigm. Yet there are several authors interested in the ways that these two seemingly disparate topics can or do intersect. These scholars are working to restore subtleties about the Cartesian paradigm that have been more or less erased from the Cartesian picture. Rene Rosfort and Giovanni Stranghellini do precisely this by admitting the secondary concept of mood to mediate between otherwise schismatically divided notions of “mind” and “body.” Their argument, succinctly put, is that “Mood has consequences for intellectual method” (396). Mind-body dualism is certainly one of the more influential tenets of the Cartesian paradigm, although the growing field of neuroscience allows us to think of mind-body division as a conceptual tool rather than as a physical fact. Perhaps unsurprisingly, the positing of such dualism proves to be an artificial tool of considerable utility, especially in sorting out internal workings of the subject.

Rosfort and Stranghellini argue in “In the Mood for Thought: Feeling and Thinking in Philosophy” that to understand Descartes' dualism as a literal division between terms and the spheres they denote results from oversimplified interpretations of Descartes' original writings on the topic. Their initial intention is to approach dualism operationally by moving beyond literal

interpretations of Descartes' dualism so that qualitative concepts might be more readily tied to the Cartesian paradigm. This move works to conserve Cartesian ideas, though in some ways their argument remains incomplete.

Differentiating between feelings (in the scope of the body) and emotions (in the realm of the mind) even while stressing that both feelings and emotions are affective characteristics of the thinking subject, the co-authors discuss how these affective characteristics regulate rationality. They do so by first addressing the thinking subject as an evolving subject, one produced through a process of biological evolution unknown to Descartes.

The rational core of philosophical investigations and the philosophical faith in the powers of logical analysis were suddenly challenged by the rationally blind forces of causality at work in evolution. An evolutionary perspective accorded explanatory significance to the animal aspect of human behavior at the cost of diminishing rationality. Nowhere do the limits of rationality become more visible than in the emotional aspects of human behavior. (398)

Many philosophers since the advent of Darwinian science have developed what are often referred to as "Feeling Theories" that work under the paradigm of seeing an emotion as a necessary, evolved mechanism that is specific to humanity (most make the case that animal emotions greatly differ from our own). Descartes' oeuvre, as rationally centered and pre-Darwinian, is then subject to a kind of dismissal in terms of "feeling theory." In contrast to such "feeling theory analysis" Rosfort and Stranghellini offer a way of preserving Cartesian theory by means of restoring philosophical nuances within their writings, nuances that have been lost over time. They point out that in Descartes' *Meditations on First Philosophy*, there is a small thread still tying the body and mind together, thus preserving a unified model of the thinking subject.

Descartes states:

But there is nothing which this nature teaches me more expressly [nor more sensibly] than that I have a body which is adversely affected when I feel pain, which has need of food or drink when I experience the feelings of hunger and thirst, and so on; nor can I doubt there being some truth in all this. Nature also teaches me by these sensations of pain, hunger, thirst, etc., that I am not only lodged in my body as a pilot in a vessel, but that I am very closely united to it, and so to speak so intermingled with it that I seem to compose with it one whole.

(*Meditations* 29)

This citation refers to the natural state of the mind within the body, and while this passage does appear to discredit generalizations about Descartes' conception of the mind-body schism (Rosfort and Stranghellini's intended argument), the passage that directly follows the above section in *Meditations* reaffirms that sensation cannot be the sole source of certainty or truth—though he does indicate that information communicated to the mind via the bodily sensations may be more-or-less reliable as prompts to useful action:

But the nature here described truly teaches me to flee from things which cause the sensation of pain, and seek after the things which communicate to me the sentiment of pleasure and so forth; but I do not see that beyond this it teaches me that from those diverse sense-perceptions we should ever form any conclusion regarding things outside of us, without having [carefully and maturely] mentally examined them beforehand. For it seems to me that it is mind alone, and not mind and body in conjunction, that is requisite to a knowledge of the truth in regard to such things. (29)

As we can see, this intermingling of mind and body is precisely why Descartes chooses to prioritize things of the mind as they are clear and precise, instead of bound to outside phenomena which confuses and complicates concepts. This also coincides with the third rule of *Rules for the Direction of the Mind* and the first meditation from *Meditations on First Philosophy*. These both explicitly state that what is not plainly clear in and of itself is unfit as objective truth. Therefore ideas, reasoning or concepts that cross between sensation and the mind are unfit for consideration as truth. When we take these operational concerns into consideration, Rosfort and Stranghellini's first point (that the mind and body are, for Descartes, naturally one being) appears to be an accurate account of Descartes' first description of the mind and body, but the extrapolation from this account is far-removed from the context of Descartes' intentions. The danger of presenting such quote-mining or "contextomies" as evidence is obvious. Presenting evidence in such a way cannot serve the purpose of preservation of philosophical dialogue. It instead overlooks the actual contributions that have been made by Descartes.

A second effort at conservation is made in "In the Mood" that offers more promise. Rosfort and Stranghellini are working to prove that Descartes was aware that there is a certain influence of affect (mood) on thinking. The co-authors provide a specific example from *Passions* in which Descartes noted an influence of affect upon reason. They draw upon Descartes' order of the passions. The passions, as shall be discussed in the next chapter, are the movement of the "animal spirits" across the body and pineal gland. This movement generates one or more of the primitive passions. Rosfort and Stranghellini discuss "wonder" as unique among these passions:

Of the six primitive passions²⁰, wonder (l'admiration) is the most basic, and the most interesting for the purpose of this essay, in that it exemplifies the persistent ambivalence of rational and bodily feelings at the center of our emotional life. ...

It is the sole passion that does not involve motion of the blood or the heart, but that stirs only the activity of the brain, which is the seat of scientific knowledge. As such it can be properly characterized as an intellectual passion, since the sensible motions that it causes takes place in the brain and not among the fluctuations of the somatic landscape of the body. (405)

Rosfort and Stranghellini endeavor to describe wonder as a mood that is neither rooted in emotion nor tied to physiological movements of the spirits.

Where most emotions and feelings tend to focus our attention on what is going on around us, moods are more like a background atmosphere. A mood normally does not single out any specific feature of our experience; rather, it seems to suffuse our experience as a whole with a certain affective hue or tinge, and thus to qualify the way we experience the world, other people, and ourselves. (408)

This last statement is problematic in relation to their argument that wonder is influential over the mind. For wonder, in order to not be “stultified” or “stupid” by Descartes’ own words, must be directed at objects of clear scientific interest. Thus wonder must by nature single out specific features of our experience. The way Rosfort and Stranghellini use this passage, consequently, constitutes a surgical removal of nearly the whole of the Cartesian paradigm, for it entirely passes over the fact of Descartes’ first rule of inquiry—that one must only seek out answers to clear and specific problems that are directed towards a clear and specific epistemological goal. Moreover, these goals should be pursued in a specified order described by the Cartesian tree of knowledge discussed in previous sections of this dissertation. Put simply, the mood of wonder, though more intellectually driven than Descartes’ other primitive passions, is still an unprecise and un-universal aspect of experience to take account of when establishing

knowledge by Cartesian means. Rosfort and Stranghellini have rightly identified wonder as uniquely intellectual compared to the other five primitive passions stipulated by Descartes, but the intellectual flavor of wonder does not make it any more clear or distinct than the others. The tone of this article implies that Descartes held wonder to be a nearly whimsical state of mind. The tone of Descartes' writing (personal and professional) is anything but whimsical. Instead, it makes constant and clear appeal for clarity, purposefulness, and orderly procedure. While it is true that intellectual passion does often inspire inquiry, and therefore also the pursuit of clarity, purposefulness, and order, Descartes does not mean for the thinking being to continue its engagement with the passions once she has spurred the will onwards. It is in fact the case that he intends for one to divorce oneself from such passions as soon as they are understood as such.

Though Rosfort and Stranghellini endeavor to imbue Descartes with a grasp of the qualitative aspects of subjectivity that later philosophers argue influences rational thought, their efforts nonetheless are aimed at adding a dimension to the Cartesian paradigm that allows for consideration of subjective, qualitative factors when considering the characteristics of a given inquiry. Once again we find a contemporary approach to Descartes that works in a conversational mode, and yet is working to fill in an "aesthetic" gap in the Cartesian paradigm. What becomes evident after reading Rosfort and Stranghellini, as well as Sjöholm, is that those encountering the Cartesian paradigm crave a means to inquire about experience and all that influences experience. Sjöholm is working with Eric Koch's idea of understanding the body as a kind of data processor that renders the world as representation to the thinking being. This is a view of the body that allows reason to approach experience as merely lumped together, singular examples of universalizable instances of sensation. On this account, the Cartesian split between mind and body is upheld by her premise of the body as "sensing machine." "In the Mood"

pursues a narrow avenue within the primary Cartesian texts that would add another dimension to the consideration of objects presented to the thinking mind—that of mood. Mood is given as a circumstance that may in some way color rational conclusions. More importantly the authors’ attempt to show that Descartes had some awareness as to the “tinting” effect of mood on conclusions.

Introspection as a Means of Objectivizing the Subjective

In the previous two sections of this chapter my overall intention has been to demonstrate that there is a contemporary interest in connecting the work of Descartes to subjective concepts, thus filling a perceptible void in the Cartesian paradigm. The arguments made by Sjöholm and Rosfort and Stranghellini highlight ways in which contemporary interests in the subjective facts of human existence stimulate desires to find in Descartes’ work more inclusive possibilities than previous scholarship was inclined to grant it. Such is the same with Tamara Albertini’s article “Crisis and Certainty of Knowledge in Al-Ghazali (1058-1111) and Descartes (1596-1650).” The essay is aimed at comparing Descartes and Al-Ghazali’s introspections in an effort to highlight their reliance on spirituality as a means to psychological wellbeing. What Albertini’s article demonstrates in a way important for our discussion is that introspection (a concept typically associated with subjectivity, and thus not typically with Descartes) is a valuable means of differentiating the objective from the subjective. The process of identifying what is objective and what is subjective, derived from dualism as discussed in chapter 1, need not always be purely aimed at establishing objective knowledge. Albertini’s comparison reveals that subjective knowledge, particularly of one’s psychological state, is a vital precursor to the pursuit of objective knowledge. I will add to Albertini’s discussion by arguing that while Descartes and Al-

Ghazali intended to guide their readers in separating the objective from the subjective in order for the objective to be made clearer, the converse situation of the subjective becoming clearer also necessarily occurs. Viewed in terms of this dual-directional interplay, “subjective objects” can be studied by the same means as given by the Cartesian paradigm. The self becomes an object and we may better understand the self when it is separate from what is external to the self, even if this separation is purely theoretical. We understand that there cannot be a full dismissal of the subjective, lest objective foundations crumble as well.

The topic of introspection is, despite the association of Descartes with pursuit of objectivity, a prevalent theme found in the work of contemporary scholars addressing Cartesian philosophy. A great deal of interest is directed at the intense, hyperbolic introspective meditation that Descartes describes in *Meditations on First Philosophy*. I suspect that interest stems from a sense of marvel at the bravery, hubris, or even the futility that is intrinsic to such a meditation. Of course, introspective meditation has been prevalent in philosophy since the time of Socrates. The Jesuit tradition of Ignatian Spirituality, in which Descartes was educated, emphasizes meditation.²¹ Meditation, in this tradition is, directed at knowing God’s will rather than one’s own. As a devout Catholic, Descartes began his own meditations with this aim in mind, yet he employed detachment from structure and implemented intense doubt rather than the typical resolute trust in a higher being. It is in light of this hyperbolic doubt that Descartes’ meditation is seen as unique—nearly freakish—and as such, it is subject to scrutiny.

In contemporary society there are a number of possible reasons why such intense introspection is not the norm. First, within the psychological arena there is the fear of losing one’s self-certitude. When one detaches from the structures of everyday life (arbitrary or otherwise), the ego becomes isolated, a state that is counter to the social nature of humanity.

Such a state is thus abhorrent to the individual. Second, there is a socially upheld view that introspection can lead to undesirable ethical and moral tendencies. Put plainly, the argument could be made that such intense introspection inherently leads to narcissism and selfishness. Third and last, with the advent of Post-Structuralism there is a distinct sense of disillusionment with the idea of the arbitrary being overcome. This section will investigate ways in which the introspective quality of Descartes could be conserved, or modified, for the benefit of aesthetic philosophical discourse—all without abandoning the four major tenets of the Cartesian paradigm. An objective worldview and the schema of objective knowledge (*mathesis universalis*) remain intact, and in fact both are strengthened by introspection as it allows one to differentiate what is objective from what is subjective. Mind-body dualism is made more robust when one works to determine what “I” am versus what “I” am not, and one can gain such knowledge not just through exploration of the objective world, but through investigations into oneself. The Cogito, as the theoretical outcome of the meditation, is the only tenet that could possibly be threatened by grand introspection. But as we see below, it is in fact fortified by Descartes’ doubt.

Resistance to grander introspection is often grounded in fear of the self-destruction that accompanies the dissolution of self-certitude. The idea that an intense inward gaze could reveal more questions than answers, or could lead to a complete destruction of oneself, is not a product of modernity. In her essay addressing introspection and Descartes, Albertini describes this same trepidation over possible self-destruction in the works of Al-Ghazali, who wrote in the late eleventh century. The comparison offered by Albertini shows that to doubt one’s own existence is a condition unsuited for proper inquiry. Al-Ghazali charts an intellectual journey that begins

with a hyperbolic sense of doubt very much like that found in Descartes' *Meditations*. This spiritual and psychological crisis is summarized in these terms:

The Munqidhmin al-Dal/I [sic] reveals how that search eventually turned into an agonizing quest. Al-Ghazali, the most celebrated scholar and teacher of his time.... ultimately felt that the only thing he could be certain of was his upcoming physical and mental collapse. Apparently, he realized that the more he accumulated objective knowledge the less he found himself convinced of the knowability of anything. ... (1)

This preamble to his deep introspection is remarkably similar to that found in Descartes' *Meditations*. Descartes specifically states the need to be stripped of all prejudices and authoritatively informed knowledge in order to find any kind of certain knowledge. While neither I nor Albertini infer that Descartes had any knowledge of Al-Ghazali, comparing them reveals the importance for both of subjective inquiry as a means to support objective inquiry. What both thinkers find is that their respective knowledge of subjectivity (their own religious beliefs in God) are the saving grace of their self-certitude—an objective piece of knowledge. Albertini states,

Descartes' famous description of a self-doubting itself in the *Meditations* has, after all, often been interpreted as a device introduced for the sole purpose of demonstrating that a skeptical position is intellectually unbearable—since it is impossible to be certain of one's un-certainty without thereby already overcoming skepticism. (2)

Albertini is of course referring to the passage from *Meditations* in which Descartes grapples with existential crisis.²² The moments, in both Descartes and Al-Ghazali, of existential

anxiety followed by resolve to clarify and revisit after illuminate the most important ways in which the Cartesian paradigm remains so valuable. In moments of existential crisis, both thinkers will themselves to a fundamental acceptance of their own existence on the basis of claiming that any other alternative undermines the qualitative character of their existence.

In our current, highly pluralized state of existence today, a similar abhorrence of skeptical introspection can be found for similar reasons. In a pluralistic society, there are multiple views on any given subject, so it logically follows that there will be some point in an individual's intellectual and spiritual path where the gaze must be turned inward in order to sort out what is true from the individual's stand point. Descartes expressed some trepidation of his own inward gaze in the *First Meditation*, yet he quickly overcomes this fear in the name of truth.²³

From Descartes (and Al-Ghazali) we are assured that such fears of the loss of the self are unfounded. What is evident, foremost, however, is that there must be a stripping away of that which does not come from the self. Albertini cross-examines the two scholars' methodologies in this first exercise of introspection below.

Descartes develops his famous four rules (only the first of which is relevant for the present inquiry): The first rule was never to accept anything as true that I did not evidently know to be such: that is to say, carefully to avoid all precipitation and prejudice, and to include in my judgments nothing more than that which would present itself to my mind so clearly and distinctly that I were to have no occasion to put it in doubt. (*Discourse on Method*, Part Two, 7, p. 15) Without any question, Descartes is as fierce and rigorous in establishing certainty as Al-Ghazali: what is (still) dubitable or only probable cannot be said to be true. Nevertheless, the clearing of unvalidated opinions and sensational perceptions is

not expected to unravel one's original-religious-basis. What it provides is the unhindered working of reason that for Descartes is invested best in mathematics—to the extent that the clarity and distinctness of thought achieved in arithmetic and geometry become the measure for reliable knowledge. (7)

Albertini has brought to light a second historical example of hyperbolic doubt that, although preceded by fear of the destruction of the ego, is overcome by a sense of willful security—a security that in the case of both men is rooted in their religion. Recalling that Descartes describes the law and “custom of the land” to be the source of knowledge when reason fails us, we begin to see how he and Al-Ghazali have generated their self-certitude from the laws and customs of the religion in which they were raised. Albertini notes this same point, but also furthers its reach by stating that there could be no other way to conquer the skeptical question than to remove oneself and see what remains before or after the self has been expunged. Below she describes how God is the logical conclusion for those immersed in a religious culture.

Moreover, one needs to realize that the Cartesian *mise-en-scene* of a Self doubting itself is ironically, the necessary preparatory stage leading to the eventual defeat of skepticism. Not even excluding himself as the object of doubt is what allows Descartes ultimately to set up our human rational ability as the basis of certainty. Thinking. “... and here I discover what properly belongs to myself. This alone is inseparable from me. I am—I exist: this is certain; but how often? As often as I think. (*Meditations*, II, p. 136)” (7) ... One finds Descartes linking self-knowledge to the knowledge of God. In the *Meditations* one learns, thus, that by scrutinizing one's thinking one discovers ideas of such clarity and distinctness that they can only be innate. For instance, the epistemologically

reliable 'idea' of the sun is not the one perceived through one's senses, but the one rendered possible through the use of geometry and arithmetic that are epistemic tools produced by the human mind. In that sense, the mathematically established idea of the sun is innate. It is in this context that Descartes claims that there is no idea as clear and more distinct as the idea of God and that we, therefore, have an even more intimate knowledge of God than of ourselves” (8-9)

Albertini makes a case for the conservation of Cartesian introspection for the benefit of spiritual security. If one sheds all knowledge of the day-to-day world, even the fact of one's own existence, then what will follow—in Albertini's logical sequence—is a better sense of one's self and place in the universe. Put simply, to lose oneself is to find oneself.

It is worth noting that the practice of the skeptical meditation does not yield universally similar results. When the philosophical atmosphere for both Al-Ghazali and Descartes is considered, their interest in self-certitude is readily understood, and yet their legacy to philosophy is strikingly polarized. Both thinkers were rebelling against the “incoherence²⁴” (Al-Ghazali's term) of the dominant Aristotelian philosophies of their times. Unlike Descartes, Al-Ghazali concluded that faith outweighed reason, and returned to religiously-grounded selfhood. His work presaged the turn away from philosophy in favor of religious traditionalism in the Islamic world, whereas Descartes' skepticism concluded in the rise of secularism and the European enlightenment. In view of the radical differences of their cultural-historical effects, the similarities between them are all the more intriguing.

Heidegger's Four Principles Opposing the Cartesian Paradigm

It is of course worth addressing the work of those philosophers who appear to directly oppose that of Descartes. As I have argued in the first chapter, the Cartesian paradigm is foundational to modern Western philosophy, but there are scholars who oppose some, or even all, of the four pillars. In this chapter, I will make the argument that despite their opposition, these philosophers cannot fully jettison from their own work the lineage of Western philosophy that runs through Descartes. Martin Heidegger is the most important in terms of the depth of his opposition. He objects to the Cartesian paradigm because of its dualism (the object/subject divide), yet I will argue that his own work cannot transcend the “Cartesian-ness” of the modern western world. Both his own analysis of aesthetics, and his idealized means of aesthetics and the way he views modern aesthetics, depend upon the Cartesian pillars in both its negative and positive work. In engaging the Cartesian paradigm in the specific arena of aesthetics, albeit in a stringently critical manner, Heidegger is unique among Western philosophers contemplating the work of Descartes.

To flesh out Heidegger’s critique of modern aesthetics, and indeed modern life generally, we must start by defining the word “subjectivism.” Subjectivism is the idea that knowledge is *only* subjective and that objective knowledge is an impossibility. For Heidegger, this has been the modern paradigm of knowledge since the Enlightenment. He finds Descartes’ schism of mind and body, and thus of object and subject, to be an “unnatural” way of understanding the world. He argues that in our contemporary times we approach the “five phenomena” of science, technology, culture, aesthetics, and religion in terms of the subject/object divide. He views this as objectionable as it displaces Dasein from these objects in ways that alienate parts of Dasein’s being from itself. He finds the subjectivist understanding of oneself to be existentially incomplete, and improper to Dasein’s way of being in the world. Heidegger’s disdain for the

Cartesian paradigm is neatly summarized in *The Age of the World Picture*: “Through Descartes, realism is first put in the position of having to prove the reality of the outer world, of having to save that which is as such” (178/139). This statement is made in reference to Cartesian metaphysics specifically, but it is easily translated to the four pillars. Simply put, if one does not need to prove (or conversely doubt then prove) any part of one’s world (natural, subjective, or otherwise) then the need for a primary principle of existence (the cogito), a means of identifying oneself vs what is not of oneself (dualism), is not necessary, nor is it necessarily beneficial to understand the world as mechanistic and possessed of objective knowledge.

To eschew Descartes’ skepticism of reality, for Heidegger, is to negate the whole of the Cartesian paradigm. Yet, is it not true that Heidegger is himself exercising a kind of skepticism? He doubts the veracity of objective knowledge, and finds that, for himself (subjectively) the idea of objective knowledge to be an impossibility. Heidegger’s call to question the schemas of modernity, though methodologically inverted from Descartes, still bear striking similarity to the hyperbolic doubt that Descartes exercised in *Mediations*. Both philosophers turned their attentions to the broader “fabrics” of one’s existence. As it happens, the two men’s historical chronology afforded them two very different logical conclusions. One found that through rational practices predicated on doubt, the thinking being can discern truths in the world around her. The other found through ontological practices predicated on doubt that Dasein can discern her existence authentically.

Heidegger, however, knows the futility of eschewing the Cartesian paradigm. He writes of the difficulty of undoing modernity: “Descartes can be overcome only through the overcoming of that which he himself founded, only through the overcoming of modern, and that means at the same time Western, metaphysics” (140/180). Heidegger vaguely proposes a more

“unified” worldview, a point of view that does not depend upon the need for verifying reality via objective means. Four anthropocentric principles by Heidegger are to provide a way of overcoming modernity:

1. The manner and mode in which man is man, Le., is himself; the manner of the coming to presence [Wesensart] of selfhood, which is not at all synonymous with I-ness, but rather is determined out of the relation to Being as such.
2. The interpretation of the coming to presence [Wesauslegung] of the Being of whatever is.
3. The delineation of the coming to presence [Wesensentwurf] of truth.
4. The sense in which, in any given instance, man is measure.

None of these essential moments in a fundamental metaphysical position may be understood apart from the others. Each one always betokens, from the outset, the whole of a fundamental metaphysical position. Precisely why and in what respect these four moments sustain and structure in advance a fundamental metaphysical position as such is a question that can no longer be asked or answered from out of metaphysics and by means of metaphysics. (145/184)

These four principles may initially appear to contradict the Cartesian paradigm, but they are in fact only additions to it. The first principle is intended to reject the idea of the self as an isolated, singular being, and propose the self as a being subject to its own moment and circumstance of being. The overall goal of the two philosophers appears to be the same, however, as one is working to objectively prove the existence of the self, while the other is working to phenomenologically state the existence of the self. The end result of both inquiries is the same. Both philosophers determine that they must give an initial guarantee of the self to progress with

their respective paradigms. That is to say, both men must satisfy the decorum of providing the mind with a sense of ease as to its own existence—a move that is truly Cartesian in nature. While Descartes sought to objectively prove one's existence, Heidegger worked to delineate the conditions of one's existence—but the end results are the same. The self provides itself with a sense of security as to her factuality and as to her sense of how to proceed with inquiry.

Operationally Heidegger proceeds precisely in Descartes' footsteps by constructing a worldview that is predicated on the self-as-such. The second principle of Heidegger's cited above is meant to be a rejection of dualism by accepting "whatever is" rather than a clearly delineated dual realms of "what is I" and "what is not I." For Heidegger, anything that is given to Dasein exists. However, Cartesian ontology (I must exist because God does not deceive) does not negate ontological investigations in these terms. In fact, in order for Dasein to reveal itself, one must first understand that Dasein exists, and that she exists in a world. Dasein and Dasein's world (time) are different objects of the same existence. Descartes did not call into question the veracity of subjective knowledge, only the universality of it.

The third principle is meant to replace a mechanistic worldview. Instead of understanding truth as something that can be understood by reason, it is instead presented as something Dasein can be "in the presence of." Heidegger's rejection of a mechanistic worldview has a distinctively conservative tone to it. Throughout his entire body of work Heidegger reveals an on-going disdain for what he perceives the hubris of the modern thinker's goal of objective knowledge. But his dislike for modernity carries with it a dislike for materialistic thinking—science and technology, for Heidegger are materialistic approaches by contemporary standards—that can be understood as a direct reflection of the Conservative revolutionary movement of his time. Simply put, his work reflects the disillusionment with urban, liberal, and commercial life. But his

critique is formed in the same pitch as Descartes' hyperbolic meditation: the pitch of doubt. Heidegger doubts objective knowledge on the grounds of what he terms correspondence: the concept of ideas, beliefs, and thoughts as truthfully, or more accurately, *correctly* corresponding to objects in the real world. He is in effect questioning the "truth-ness" of scientific knowledge, largely based on what he views as its corruptive influence on his own idealized, more organic, and decidedly "working-class" mode of existence. His argument in no way calls into question scientific truths. It only calls into question, in a conservative manner, the benefit of it to humanity.

The fourth and final principle is given above would both reject and replace *mathesis universalis*. As previously noted above, when Heidegger writes an explicit treatment of *mathesis universalis* (*Modern Science, Metaphysics, and Mathematics*), he conspicuously drops the "universalis" during his discussion. As he was dubious about objective knowledge (and conversely about subjective knowledge), it is unsurprising that he would view the concept of *mathesis universalis* as another "enframing" to be overcome. To overcome *mathesis universalis*, he proposes Dasein "study" what she is in primary epistemic contact with—that which is at hand. The argument that Dasein should only concern itself with this kind of localized knowledge is, in our contemporary age especially, a radical restriction of one's scope of inquiry. The very idea is akin to erasing history. Descartes' vision for *mathesis universalis*, of humanity working towards a body of knowledge about the natural world, has been strongly established in the West. The idea that such a foundation would be overcome, or even that it should be, has the flavor of nostalgia for an age of existence that cannot be re-discovered.

Heidegger and Aesthetics

As this dissertation's overall focus is aesthetics, I will limit my account of Heidegger's work to his views on the Cartesian pillars and aesthetics—two fields he unexpectedly unites via a strong critique. Heidegger views artworks created since the Enlightenment as a symptom of the subjectivism begat by the Cartesian paradigm. Put simply, he finds the aestheticization of the arts to be the cause for the artworks made. The general supposition he wishes to question is that the artwork is the object and that the viewer is the subject, and the business of sensation is the central concern of aesthetics. It is through the “aestheticization” of art that we understand art as such within modernity. The attitude towards art that modern aesthetics maintains is that art is contained within the full scope of aesthetics—meaning that it is kept in specific arenas, forms, and studied in terms that are enframed by the concepts of the science of aesthetics. Heidegger finds this to be an impoverished way of approaching art. Indeed, to “approach” art at all is an abhorrent idea for Heidegger.

For him, art is not aesthetics, but instead has become aestheticized, and in so doing has pushed to the margins of awareness by its specialization, its lack of a universal system of expression, and by the innumerable empty artistic gestures that occur in our culture (for example, the beading of one's hand-bag or the decoration of one's home, no matter how elaborate or interesting, would be empty gestures for Heidegger). Technology (and Heidegger does place our current understanding and creation of art in the realm of technology) and science are merely means to control every minute aspect of our lives, as if that control would serve some greater purpose. Recalling that the Cartesian subject/object relationship is the underlying principle of nearly all philosophy during Heidegger's time, Heidegger makes the case that from such a dichotomy, human kind has engaged in a never-ending attempt to bring all that is sensible to it

under our control. In “The Question Concerning Technology,” Heidegger spells out plainly that subjectivism has taken on a nearly religious status in the modern era, “Everything depends on our manipulating technology in the proper manner as a means. We will, as we say, “get” the technology “spiritually in hand.” We will master it. The will to mastery becomes all the more urgent the more technology threatens to slip from human control” (Heidegger “Technology” 2).

Heidegger recalls Nietzsche’s “will to power” with this account of the process of enframing described in “Technology.” Enframing (*gestell*), for Heidegger, means the application of technology not just as a means to a particular end, but instead as part of the enframed fabric of existence. What is revealed as truth must first be enframed, meaning that it had to have a way to exist in the world, more specifically, must have a way to be understood and seen as *existing for* the thinking-being. “Everywhere everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for a further ordering” (7). Heidegger criticizes the idealism that pervaded continental philosophies for centuries via his concept of enframing. The aestheticization of the arts, however, is a unique topic to approach with this critique, as the arts are specifically human-made (opposed to human-discovered) *for human-consumption*. In a concise summary of this key concept for Heidegger, philosophy scholar Iain Thomson crystallizes the subjectivist underpinnings of modern philosophy:

In this way, modern philosophy lays the conceptual groundwork for subjectivism, the “worldview” in which an intrinsically-meaningless objective realm (“nature”) is separated epistemically from isolated, value-bestowing, self-certain subjects, and so needs to be mastered through the relentless epistemological, normative, and practical activities of these subjects. (Thomson 5)

Returning to Heidegger's specific critique of aesthetics, it is important to note that he does not entirely dismiss the subject/object dichotomy. Indeed, it is a crucial part of his ideas of how artworks can transform one's state of being. For Kant and other idealists, the subject/object relationship is the given state of things at all times. For Heidegger, the subject/object relationship is only revealed at moments when Dasein is isolated from and reflective of the objects of its world via a disruption in its normal, "hands-on" (*zuhanden*) state of being. When objects are revealed by small, ephemeral moments of this type of disruption of the norm is when the truth of one's subjective being is revealed. Heidegger's conception of the arts, therefore, does not fully dismiss the object/subject divide, but only seeks to convey that the knowledge gained from this experience is non-universal—in other words it is *subject to the conditions and assumptions of one's time and place*.

CHAPTER 3

Descartes and Beauty

“Poetry is the guardian of the non-trivial, a thunderstorm of aphorisms, sibling to the philosophical fragment. But the reverse is also true: As long as philosophical thought cannot avoid falling back on metaphors, similes, and symbols, it remains, however loosely, bound up with poetry, and indebted to it.” – Durs Grünbein, *Descartes’ Devil*

Descartes, with his isolation of the soul in its own volitions, effectively disrupts the discussion of societal good. Within this chapter, I will examine Descartes’ model of the soul, his conceptions of the good, and present his limited views on poetics, all as a means to define what precisely a Cartesian aesthetic program might entail. The Cartesian model situates poetics in terms of the individual as well as within society, and it holds a provisional space for cultural customs in regards to epistemic practice. I will argue that Descartes’ treatment of the soul is incomplete because of its neglect of creative expression. While biographical evidence reveals that for Descartes personally poetry does hold some value to the soul, his canonical writings have little to say about why the arts should be appreciated. Through a detailed examination of his ethical and moral propositions, we can extrapolate the beginnings of a Cartesian aesthetic program, as well as identify gaps in the Cartesian paradigm that invite aesthetic discourse. Further still, I maintain that while Descartes viewed mathematics as epitomizing the universal on the theoretical side of human existence, he relies on cultural knowledge to provide practical advice when theoretical knowledge is lacking, an acknowledgment provides space in his model for the study and appreciation of the arts. This chapter delves heavily into Descartes’ own model of the soul and his scant writings on the topic of morality. In conclusion, I will make the case

that Descartes does hold some small esteem for the cultural aspects of humanity, and thus provides a space for the study of the arts as a practical form of knowledge.

The Cartesian Model of the Soul: A Synthesis of Plato and Aristotle

The two most prevalent models of the soul during Descartes' lifetime would have been those of Plato and Aristotle. Descartes synthesizes the two models, forming an inward-moving-out model rather than the more dichotomous top-down (Plato) or bottom-up (Aristotle) schemas. With this synthesis, there are windows of opportunity for aesthetic discourse. Descartes' model of the soul shares similarities with Plato's on several points:

- (1) reason rules over sensation;
- (2) sensations are not to be trusted;
- (3) the truths that govern reason serve to penetrate the sensorial realms, giving us knowledge that transcends time and context;²⁵
- (4) their respective models of knowledge are mathematical in nature.

For Plato, reason is placed hierarchically over the separate parts of the soul, whereas for Descartes it is inseparable from appetite. But reason should rule over the passions that govern them in both models. Moreover, both thinkers shared mistrust of the senses. While describing the conditions necessary for one to realize truth, Descartes prescribes a shedding of the senses' influence over observation and thought, likening their attributes to those of a villain-like character:

I shall consider myself as having no hands or eyes, or flesh, or blood or senses, but as having falsely believed that I had all these things. I shall stubbornly persist in this train of thought; and even if I can't learn any truth, I shall at least do what I

can do, which is to be on my guard against accepting any falsehoods, so that the deceiver—however powerful and cunning he may be—will be unable to affect me in the slightest. (*Meditations* 3).

Further, for both Plato and Descartes, truth (and thus knowledge) must go beyond the sensorial—in other words truth must be abstract, while knowledge must be mathematical in nature.²⁶ Likewise, Plato's truths Forms, were mathematical in nature (523d-525b, *Republic*²⁷). For Descartes truth necessitated an axiomatic, geometric mode of explication.²⁸

The similarities between the Cartesian and the Platonic souls are enough to make one presume that Descartes, like Plato, would be dismissive of aesthetic concerns. However, none of these similarities uphold Plato's charge against mimesis, nor do any of these aspects necessitate a full dismissal of the arts or of qualitative concepts generally. Reason ruling over sensation does not negate sensation. Instead it reassigns sensation from being an immediate authority on truth to being an object of consideration in terms of the mechanisms at play when sensation does direct the mind, as well as the source of what one can rightfully discern from sensation. Consider Descartes' own interest in the subject of *Optics*. His interests were in determining the mechanisms of the human eye, as well as the properties of light. By turning his attentions to these subjects, Descartes was working to provide refinement to the thinking mind's understanding of its own vision. This work to refine sensory intuition via a sound basis of mechanical knowledge allows for the dismissal of Plato's charge of mimesis.

In Book X of *Republic* Plato charges the arts with mimesis—that is to say, with being mimetic of Ideals rather than the Ideal themselves, and therefore a corruptive force. Art objects are twice removed from the ideal, whereas objects of craft—a table for example—is only one step removed. The table is less corrupt than the painting of the table as it is not inherently

materially false. This charge of mimesis could be carried over to the Cartesian paradigm, as the arts are sensorial, and sensorial information is not rational information, and is therefore not a means to determine knowledge. However, Descartes makes a significant break with Plato in terms of charges of mimesis. Deborah J. Brown's essay, entitled "Descartes on True and False Ideas" helps us to illuminate this break from Plato. Though her own discussion is centered on the Objections and Responses portion of *Meditations*, her references to the question of material falsity are germane to the topic of corruptive mimesis. Brown refers to the exchange between Antoine Arnauld and Descartes, working through the problem of "no things" in which the objective nature of cold is at stake. The debate centers upon the idea of cold being an absence of heat, or its being a thing in and of itself. Brown establishes the basis of her review in the principles provided by the *Meditations*, properly rooting her claim in the overall operations of the Cartesian paradigm. She states first and foremost that, "We learn from the Sixth Meditation that the primary function of sensation is to deliver us the world not so as to know it but to navigate it successfully as embodied agents" (197). Brown then moves to the Cartesian approach to material falsity: "The falsity of such ideas [of cold] rests with their being 'referred' to as something other than that of which they are ideas" (207). Simply put, the representation of the sensation to the mind is what is at stake, not a determination of truth in the sensation itself. Brown avers that for Descartes all that the thinking being may take awareness of in the natural world are equally representations to *res cogitans*. "All ideas are true and positive because 'weather cold is a positive thing or an absence does not affect the idea I have of it' (207).

Brown concludes that sensations, be they caused by non-things, voids, or illusion, are for Descartes legitimate representations for *res cogitans*, but only if they are understood as positive objects: "If cold is a privation, when the idea of cold represents bodies as modified in a positive

way, the idea will be materially false but not, on that account, harmful to the union. Nor will it be uninformative. The falsity of such ideas renders them unfit for incorporation in physics, but necessary for everyday life and our understanding of our place in the material world” (211).

What is implied, but never acknowledged with the above statement is the idea that mimesis of a thing, even if it turns out to be no-thing, is not cause for dismissal. If the eye is fooled by a representation of a table, the trick of the eye is a positive object in terms of the body’s reaction. Therefore, it is an object worthy of inquiry. What is more, once understood as an illusion it is a cause for further investigation as it is an indicator of a gap in knowledge and discourse. Sensorial representations that are not immediately evident are veritable “markers” for further inquiry with the provision that the metaphysical and physical knowledge that are at play are properly established. In this case, the corruption that Plato associated with mimetic objects (art or otherwise) can no longer be considered as merely confusing or distracting forces. Mimesis is now a cause for further investigation as to the means, function, and causes of the mimetic behavior. If mimetic activity is clear of the charge of mimesis, then the mimetic properties of painting, for example, (Plato’s *bête noire*) are to be revisited in terms of the applied skill and means that would generate such an object. A thinking person’s inquiries must now, by necessity, move towards the study of painting on all the aspects of its generation—inclusive of the artist, the era at hand, the techniques employed, the discourse that preceded the piece, etc. The dismissal of the Platonic view of mimesis combined with the Cartesian objective world view (a mechanistic and knowable universe), necessitates a niche for the study of the arts as objects.

This objectification of the arts, however, will not satisfy all. It does little to address the Aristotelian view of poetics as a means of catharsis, nor does it free the arts from the bonds of “proper forms” (recall that Aristotle’s *Poetics* is a practical guide to the proper ways of creating

poetry). The objectification described above only serves art objects as products, not processes. There is little room for acknowledging the arts as having a function beyond objects that pique curiosity via their technical creation and sensorial effects. However, Descartes addresses Aristotelean philosophy by means of the foundation of Cartesian epistemology—metaphysics—and it is on this subject matter we see a second schism from Classical philosophy in the Cartesian paradigm. Descartes' modeling of the soul will free not only objects from charges of mimesis, but will also challenge the Aristotelian conception of experience as bound by memory and cognition. This divorce from the Aristotelean model of experience has effects on the morality that Aristotle connected to cathartic poetic experience.

While Plato determined the basis of the soul to be directly linked to ideals beyond the physical body, Aristotle found the basis for the soul to be seated in the functions of memory and cognition. Cartesian dualism, the basis for Descartes' model of the soul, begins with a declaration of guiding principles, not precisely akin to Plato's in *Republic II*, in which Plato declares that the principle of justice guides one's understanding of the soul. Five principles shape the unfolding of Descartes' claims, claims linked together by strict sequences of logical predication modeled upon geometric deductive reasoning. Different from Plato's, these five principles are not directly linked to any pre-existing notion of morality. The Cartesian principles for defining the soul are: completeness, essentiality, uniqueness, comprehensiveness, and exclusivity.²⁹ In *Meditations on First Philosophy*, Descartes utilizes these principles to construct his model of the soul as seated in thinking (doubting, specifically). The planting of the individual soul into subjectivity is contra to Aristotle in that experience is no longer defined in the sense of everyday experience, but in the sense of all that the mind may sense, including its own machinations (a key point for Descartes modeling of the body as a machine³⁰). The soul is then

split into the two distinct components: the mind (*res cogitans*), and all that is external to the mind taken in by the senses (*res extensa*). This overturning of the classical notion of experience into the sense's representation of experience serves as the anchor of modernity in innumerable ways (reference Chapter 1). Most importantly, Descartes' dismissal of Aristotelean metaphysics comes with the establishment of his own epistemological paradigm.

Aristotle connects experience with the counterparts of memory and perception in *Metaphysics* and in both of the *Analytics*. He separates experience into two kinds, a primitive kind of the sort that we share with animals, and a higher kind that is preparatory for reason. (see Aristotle's *Analytic Posterior II* 19) When this higher form of experience is joined by rationality, there can be a generation of knowledge. In the essay "Aristotle's Notion of Experience," Pavel Gregorić and Filip Grgić demonstrate that for Aristotle experience requires a single cognizant disposition. They describe it thus:

By contrast, we have distinguished between experience and basic rationality, finding some evidence for this distinction in *APo. II.19*. This distinction enabled us to take experience, in all its forms, as a single cognitive disposition. It is a single cognitive disposition because it has to do, in all its forms, with accumulation of facts concerning particulars. If experience is coupled with rationality, facts can be organized by means of universals and formulated in universal propositions. (30)

The Cartesian concept of experience frees cognition from artificial structures of idealism. Gregor Schiemann, in his essay *Contexts of Nature According to Aristotle and Descartes*, opens this topic elegantly with the following description of the Cartesian understanding of experience:

The privileged context of experience for Descartes' concept of nature is one's own inner self experience. From the point of view of cultural history, this approach reflects the initial release of the individual from preordained frames of reference. The individual turns away from everyday life toward her or his inner world, which is present only mentally. The inner world is the domain of more or less conscious thoughts, sensations, feelings and moods - a field of experience in which the bodily, the mental, and their combinations occur. (Schiemann 70)

Modernity is the manifestation of this turning inwards. The centralization of the doubting/thinking subject as a being capable of generating its own knowledge of its experience is the basis for the significant growth in the fields of psychology, philosophy, and innumerable aesthetic movements. From the above we can see that individual experience guided by chaotic movements of animal spirits is the framework from which one, through means inherently available to oneself, is granted autonomy from culturally upheld concepts. This view of the soul as “self-contained” carries the implication that catharsis be likewise of a unique and self-made character. Put simply, if *res cogitan* is unique in its completeness, then it follows that those mechanisms that serve to purge a unique soul would also be unique. As modernity is grounded upon this individualistic turn, we will find that the socially operated means of catharsis that was Aristotle's famed pardon for poetics cannot be upheld in a Cartesian paradigm. Recall that Descartes finds the desires of the soul so un-universal as to ascribe to them a chaotic nature, broiling about in a human body like bubbles in a champagne glass. Therefore, it will follow that the means to “righting” the soul could also not be universal. Therefore, the strictly dictated themes, forms, and other prescriptive requirements that Aristotle lays out for poetics are divested of their “universal” quality.

The Characteristics of the Cartesian Soul

Descartes views the soul as unfixed in disposition but changes arise solely by actions of a physical nature. He sets the metaphysical and physical boundaries of the soul as follows in *Passions of the Soul*,

I note that anything that happens is generally labelled by philosophers as a ‘passion’ with regard to the subject to which it happens and an ‘action’ with regard to whatever brings it about that it happens. Thus, although the agent and patient—the maker and the undergoer—are often quite different, an action and passion are always a single thing that has these two names because of the two different subjects to which it may be related. (1)

Passions are clearly the realm of the thinking subject. Actions, though they may not always be external to the thinking subject, are clearly outside the bounds of the theater of the mind. Descartes elaborates upon these definitions, giving us passions caused by will and passions caused by perception:

There are two main kinds of thoughts—actions of the soul and passions of the soul. The ones I call ‘actions’ are all our volitions, ‘i.e. acts of the will’, because we experience them as coming directly from our soul with, apparently, no input from anything else. On the other hand, our various perceptions or items of knowledge can be called the soul’s “passions”—taking this word in a very general sense—because they are often not “actively” made by our soul but rather “passively” received by the soul from the things that they represent. (5)

Descartes gives the subject the new feature of the will as separate from emotions. He describes the will as also being of two kinds: “actions of the soul that aim only at something in the soul itself, as when we will to love God or in any way to apply our mind to some object that isn’t material; and actions of the soul that aim at some event in our body, as when we will to walk” (6). In a later passage he makes the more declarative statement as to the position of the will:

But the will is by its nature so free that it can’t ever be constrained. Of the two kinds of thought I distinguished in the soul in article 17—its actions, i.e. its volitions, and its passions, taking this word in its broadest sense to include every kind of perception—the actions are absolutely within the soul’s power and can’t be changed by the body except indirectly, whereas the passions are absolutely dependent on the bodily events that produce them, and can’t be changed by the soul except indirectly, with the exception of cases where the soul is itself their cause. All that the soul actively does is this: it wills to do something x, and that brings it about that the little gland to which it is closely joined moves in the way needed to produce the doing of x. (12)

Prior to his conception of the soul and its will, we may affirm that, prior to Cartesian theory, from Augustine to Aquinas to Luther, the soul was subject to God. Since Descartes, the soul is subject to its will and the will is largely subject to perceptions—perceptions which Descartes also divides into two sorts, those of the body (sensations) and those of the soul. Here is where imagination (the perceptions of the soul) enters his paradigm and proves to be key to our understanding the Cartesian Soul:

The ones [imaginings] caused by the soul are our perceptions of our volitions and of all the imaginings or other thoughts that depend on them. We can't will anything without thereby perceiving that we are willing it—that's for sure. And although our soul is active in willing, it is passive in its perception of that action. But because this perception is really one and the same thing as the volition, and names are always based on whatever sounds better, we usually don't call it a 'passion' but an 'action.' (6)

Descartes is quick to dismiss the meaning of certain types of irrational imaginings—dreams and day dreams—as if they were a form of imbalance brought about by a passivity of the soul,³¹ but later discusses them in more depth, referring to them as *passions of the soul*. These types of thoughts are described as “perceptions, sensations or commotions of the soul which we relate particularly to the soul, and are caused, maintained and strengthened by some movement of the spirits”³² (*Passions* 8). Descartes prefers the term “commotions” as it best describes the chaotic actions of the animal spirits.³³ The preceding section of *Passions of the Soul* presents a particularly idiosyncratic discussion of the Pineal gland as being the seat of the soul and the source of all internal thoughts.³⁴ Sidestepping Descartes' incomplete understanding of anatomy, what we must take from Descartes' position for the sake of our discussion is two-fold:

- (1) For Descartes, there is materiality to thoughts and imaginings to be found in the body
- (2) the body and mind are linked by perceptions of the senses.

As thoughts are material in nature they cannot be in and of themselves corrupt, nor can they be understood as beyond our understanding—as material parts of our mechanistic world they are under the auspices of *mathesis universalis*. They in themselves must someday (when the proper metaphysical, physical, and mechanical means are established) become subject to inquiry. The

control Descartes grants the mind over the body is not a natural order so much as a practiced skill of identification of the various objects presented to it. This is cultivated by the will, as he mentions several times throughout *Passions* people who are slow, stupid or weak-willed in terms of their passions.

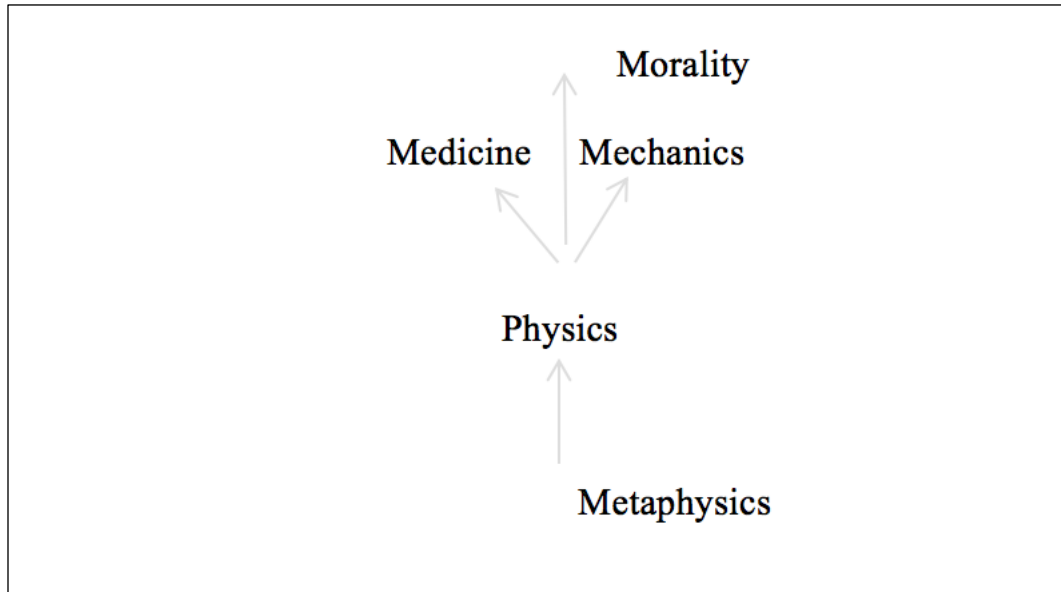
Cartesian Morality and Virtue

While Descartes never gives an in-depth discussion of morality in any of his major texts, he does provide some small details as to his ideas of the good. The Cartesian soul contains within it nearly all that is needed for negotiating the greatest good, practicing virtue and attaining happiness—Descartes' final end of the good.

Reason is cultivated by the investigation of the sciences, which “yield that pleasure, which is found in the contemplation of truth, practically the only joy in life that is complete and untroubled by any pain” (*Rules*, 22). Descartes establishes *res cogitan* as possessed of all that it needs, not only for reason, but for moral judgement as well. By connecting moral judgement and epistemology in this way, the good must also be understood as tied to epistemology. Put simply, the way to develop one's reason is to pursue as much knowledge as possible so that reason may be best informed. When reason is well developed, the good will become evident to reason. Ergo the good is epistemologically informed, putting Descartes' ethics in line with that of Aristotle: the realization of a happy life ought to be the pursuit of natural philosophy.

It is possible to argue that Descartes' insistence on the universal truths of science (a top down approach) as *the* source of knowledge that informs reason could be construed as more Platonic in nature. But the significant difference of Descartes' universals from those of Plato is that Descartes situates his universals in the knowledge of this life (physics and metaphysics),

rather than in divine ideals that are unknowable during the course of a natural human life³⁵. This is not to say that experience of this life is the source of knowledge, as the beginning of Descartes' *Meditations* clearly shows mistrust for the senses. Knowledge is instead to be abstracted from the natural world, and the truths of the divine are to be considered in the “next life,” as Descartes writes at the end of the third meditation.³⁶



Descartes believes that the knowledge necessary for reason to negotiate the good is specifically ordered. Descartes uses the metaphor of a tree to describe this order, beginning from its roots and growing upward- a notable inversion of Plato's order of things.

The roots of this tree are metaphysics, followed by the trunk of physics, and capped with the branches of the practical sciences of medicine, mechanics, and highest of these branches, morality. For the wisdom of morality, we must first solidify the wisdom of all of the lower parts of knowledge. This perhaps gives us insight into why Descartes himself never tackled in detail the topic of ethics, as he felt that one first had to master the knowledge of metaphysics and physics—a task that certainly spans a lifetime. More telling of his silence is a passage from a letter to his friend Pierre Hector Chanut. Recalling the rigorous maintenance of specialization of

labor of Plato's *Republic*, he writes of his lack of a right to consider such a topic: "I believe only sovereigns, or those authorized by them, have the right to concern themselves with regulating the morals of other people" (Descartes *Correspondence* 203). Despite the absence of a definitive text on the topic we can still extract a clear ethical standpoint that is reminiscent of both Plato and Aristotle. Donald Rutherford in his essay *Descartes' Ethics* succinctly captures the implications of Descartes' scant writings on the subject, "If Descartes limits the role of philosophy in determining specific moral rules, he nonetheless upholds the ancients' conception of philosophy as the search for a wisdom sufficient for happiness. It is in this sense that ethics remains central to Descartes' philosophy."

While it is true that Descartes radically changes the conception of the good as being geared towards the individual soul rather than the soul amidst the city-state as it was for both Plato and Aristotle, Descartes nonetheless does insist that if one follows the order of knowledge to discover truth, reason will be so well informed that the good will be clearly evident. As Descartes was deeply entrenched in the study and completion of the first two levels of knowledge, his feeling of being unqualified to generate an original moral code discounts his obligation to direct the soul in some way. Descartes does humbly offer a framework for the time being, one that he never viewed himself as having finished. Still he sketched this provisional moral code, found in Part II of *Discourse on Method*:

- (1) The first was to obey the laws and customs of my country, holding constantly to the religion in which by God's grace I had been instructed from my childhood, and governing myself in all other matters—i.e. all the ones not settled by the law of the land or my religion—on the basis of the most moderate and least extreme

opinions, the opinions commonly accepted in practice by the most sensible of the people with whom I would have to live. (Descartes, *Discourse* 11)

(2) My second maxim was to be as firm and decisive in my actions as I could, and to follow even the most doubtful opinions, once I had adopted them, as constantly as if they had been quite certain. (Ibid)

(3) My third maxim was to try always to master myself rather than fortune, and change my desires rather than changing how things stand in the world. (Descartes, *Discourse* 12)

(4) Finally, to conclude this moral code, I decided to review the various occupations of human life, so as to try to choose the best. Without wanting to say anything about other people's occupations, I thought it would be best for me to continue with the very one I was then engaged in, and devote my whole life to cultivating my reason and advancing as far as I could in the knowledge of the truth, following my self-imposed method. Since beginning to use this method I had felt such extreme satisfactions that I didn't think one could enjoy any sweeter or purer ones in this life. (Ibid)

From the above, in particular the first three maxims, we can see Descartes recollecting Aristotle's couching of the good in terms of virtue as a perfected control of the will requiring a sound judgment informed by reason. This is crystallized in Part III of *Discourse on Method*.

For our will tends to pursue (or avoid) only what our intellect represents as good (or bad), so all we need in order to act well is to judge well; and judging as well as we can is all we need to act as well as we can—that is to say, to acquire all the

virtues and in general all the other attainable goods. With this certainty, one cannot fail to be happy. (13)

This articulated an idea of virtue as a comportment of the will as informed by reason's *bons sens* (good judgment) so as to move towards happiness. All that is necessary for the proper conditioning of the will is already possessed by reason. Sound judgements allow the pursuit of *individual* happiness, which is the greatest good.

Notably missing from his theory is a discussion of the social aspects to virtue and happiness, as well as any explicit acknowledgment of poetics or human expression. Plato and Aristotle maintained their discussions of the good on a social plane, with poetics informing the soul (in respectively undesirable and desirable ways) and with the individual soul being explicitly part of a collective of souls (the *kallipolis* or the acropolis). Descartes' isolation of the individual via his rationally directed and epistemologically informed moral stance makes generating any kind of social codes and norms very difficult. Of particular interest to this dissertation is the problem of expression. As individual thinking beings begin to determine criteria for moral judgments, the Cartesian paradigm limits their expression of their findings to those modes of language that suit the more immediate needs of knowledge—recall that a Cartesian moral stance must first be epistemologically informed, therefore questions of knowledge must first be answered. By putting a priority on knowledge of the natural world that is universal in nature—meaning that it must be expressible in a universal manner such as mathematics—Descartes fails to foresee that as the good is inextricably tied to the individual, a means of expressing the good as an individual, rather than as a universal good, must be granted. He has essentially left a gap in the means of expression for *res cogitans*. By granting *res cogitans* the skills of reason and with the will to focus that reason on making sound judgments of all

objects presented to it (provided that first all necessary knowledge of those objects has been established), Descartes has made the will self-contained in the individual, and therefore, not universal. One's judgements as to how to impose the will upon the world will inevitably be unique to each individual. It is difficult to determine whether he assumed that all thinking beings would arrive at the same moral conclusions, as the knowledge used to inform those conclusions would be universal; or if he even considered that different thinking beings could arrive at different or conflicting, but still logical and epistemically informed, moral conclusions.

With this we find a distinct hole in the Cartesian paradigm that could be filled with the introduction of a Cartesian aesthetic program. If individual judgements were granted

- 1.) A means of expression
- 2.) A means of judging the quality of those expressions, the concerns of the non-universality of said individual expressions could be ameliorated while still maintaining the Cartesian paradigm.

It is arguable that this is what Kant aimed to do with his third Critique. By establishing the finality of form, Kant determined that art objects are universally reduced in such ways that easily facilitate a universal understanding of individualistic expressions. However, this is not wholly true to the Cartesian paradigm of the good—Kant's conception of the good is predicated on fundamental cosmopolitanism and is not based on individual judgements.

Cartesian Practical Ethics

The practical problems of a self-contained, and individual, moral compass described above are somewhat addressed in several of Descartes' major works, but never in a satisfactory manner. In *Mediations*, for example, we see a distinct casting off of practicalities as he

undertakes the exercise of reduction and with such Descartes identifies a paradox that necessitates virtue as a guiding force. To begin, he posits that the will must assent to truth when it is clear and distinct, but when it is not so plain one must suspend judgment: “If when I don’t perceive the truth vividly and clearly enough I simply suspend judgment, it’s clear that I am behaving correctly and avoiding error. It is a misuse of my free will to have an opinion in such cases: if I choose the wrong side I shall be in error” (21). Within the theoretical context of the *Meditations*, this guideline is sound, but in reality indecision or indifference is often impossible. Of importance is the problem that there will be in life an inevitable lack of knowledge on some subject that requires our judgment. As we shall see from Descartes’ correspondence with Princess Elisabeth of Bohemia, he finds virtue (and the maintenance of health as productive of virtue) to be the sole remedy for this aporia.

In the letters from the summer of 1645, Descartes distinguishes for the Princess the differences between the good, happiness, and finality of the good. Virtue (the supreme good) is entirely dependent on free will and is in itself alone sufficient for happiness. Happiness is the natural product of virtue as “we cannot ever practice any virtue—that is to say, do what our reason tells us we should do—without receiving satisfaction and pleasure from doing so” (*Correspondence* 30). Descartes creates a correspondence principle for the final end of the good by equating happiness and virtue. “Virtue is the target at which we ought to aim, but happiness is the prize that induces us to fire at it” (34). From this we can see a resolution of the paradox described above. Rutherford provides an eloquent précis:

As Descartes defines it, virtue depends upon the employment of reason. While it is conceivable that one might have a “firm and constant will” to do something without having examined whether it is the right thing to do, one cannot have a

firm and constant will to do what is judged to be the best, unless one is capable of judging what the best is. Thus, virtue presupposes knowledge of the relative goodness of ends, and this knowledge Descartes assigns to reason. (Rutherford 7)

With the development of this theoretical stance on the good, virtue, and happiness, Descartes compiles a second, more elaborate set of six principles (“the truths most useful to us”) in *Meditations*. Adhering to the model of the tree of knowledge, the first two principles concern metaphysics,³⁷ and the next three physics and its three subsequent branches.³⁸ The sixth and final principle is more practically inclined, making it directly germane to our discussion:

I have only this to add, that we ought to *examine in detail all the customs of the place where we are living*, so as to see how far they should be followed. Although we can’t have certain demonstrations of everything, we ought to make choices and (in matters of custom) embrace the opinions that seem the most probable. Why? So that when there’s a need for action we won’t be irresolute; because nothing causes regret and repentance except irresolution. (*Correspondence* 30)

The language Descartes employs here is significant. The imperative of “ought” implies a clear ethical obligation in Descartes’ view. The use of “custom” vs. an alternative of, for example, “law” offers a distinct doorway by which aesthetics may enter into considerations of Cartesian morality. Custom is defined as the particular way of doing something as specific to a place, time, or society. Wrapped within this of course would be the customs that are aesthetically informed such as the arts, poetry, theater, etc. As we recall Descartes’ tree of knowledge, we will remember that no specific branch that pertains to the study of humanities, and yet here is a direct call for the study of culture. Descartes does not imply that true knowledge can or should be generated from the study of culture yet with this last principle we find an interesting pathway

into the moral practicalities of living within a society of individual thinkers. It is indisputable that to study custom (or culture to use the modern term), one must study history, religion, literature, and, most notably for our discussion, *the arts*.

Descartes' Views on Poetry as Medicine

Descartes viewed the universe and all of its trappings as clockwork mechanisms. His views on the human body were no different. In this section we will explore the branch of medicine as it has been described in Descartes' tree of knowledge and the enfolded cultural aspects therein. As stated above, Descartes intended each of these branches as modes of natural philosophy, but I argue that within each branch there is a practical need for the study of culture. Descartes states that in matters of which no rational knowledge is to be had, one must turn towards "the custom" of the land for information as to how to proceed. Within the branch of medicine, we find a distinct tie to poetry and to Aristotelean conceptions of poetics as a tool for righting oneself. The branch of medicine is where Descartes believes one finds the maintenance of the mind's well-being, as well as that of the body. He states in Part 6 of *Discourse on Method* that fundamental to reason is "...the preservation of health, which is certainly the chief good and the basis for all the other goods in this life. The mind depends so much on the state of the bodily organs that if there is to be found a means of making men in general wiser and cleverer than they have been so far, I believe we should look for it in medicine" (*Discourse* 24-5).

From this nascent definition of psychology (a sphere of medicine that certainly is indebted to Cartesian dualism) we must proceed to those activities that Descartes would find as beneficial to the mind. As discussed in previous sections of this essay, Descartes firmly advocates a detachment from the senses as the inferences of reason. Yet when examining the two

brief allusions to poetry found in his oeuvre, we can see that Descartes does credit momentary indulgence of the emotions via aesthetic acts, with medicinally quieting the passions of the soul.

The first is found in *Discourse on Method*³⁹ in which he takes a clearly Platonic stance on historical accounts (the first sentence shuns any misdirection for the sake of expression) and makes a passive gesture of poetry as beyond his natural skill:

And even the most accurate histories, if they don't alter or exaggerate things' importance so as to provide a better 'read', are likely to falsify things in a different way: such histories omit most of the meaner and the less striking factors in a situation, so that what they do include appears in a false light, looking grander than it really was. And a result of that is that those who regulate their conduct by examples drawn from these works are liable to fall into the excesses of the knights-errant in our tales of chivalry, and make plans that they haven't the power to carry out. I valued oratory and loved poetry; but I thought that each of these was a mental gift rather than something to be achieved through study. People with the strongest reasoning and the most skill at ordering their thoughts so as to make them clear and intelligible are always the most persuasive, even if they speak only a provincial dialect and have never learned rhetoric. And those who have the most pleasing fancies and know how to express them with the most embellishment and sweetness would be the best poets even if they knew nothing of poetry as a discipline. (*Discourse 4*)

The description of a poetic talent as a "mental gift" is most telling when taken in conjunction with Descartes' description of reason as being god-given. In *Meditations*, Descartes describes this conclusion:

It seems as though we were shown that all that which can be known of God may be made evident by means which are not derived from anywhere but from ourselves, and from the simple consideration of the nature of our minds. Hence I thought it not beside my purpose to inquire how this is so, and how God may be more easily and certainly known than the things of the world. (*Meditations* 1)

If reason is a gift from God so that we may know him better, then Descartes, as a determinist, should find that the mental gift of a poetic mind serves some purpose as well. For Descartes, reason is the capacity to know and govern oneself as an individual in accordance with the laws of nature and God. The ethical moral code that he prescribes also calls for a study of the customs of the land, something that is not necessarily rational in nature. It follows then that we must also hold a capacity for understanding ourselves as social machines. It could be argued that a natural talent for poetry could be understood as parallel to a natural talent for reasoning—that it is a means to know ourselves in terms of one another. This reading of a small excerpt of *Meditations* opens yet another window for a Cartesian aesthetic program.

Descartes also specifically mentions poetics as an occupation in a letter to Princess Elisabeth of Bohemia from 1649. There he makes a noteworthy comment on the Princess' inclination to write verse while confined to her bed due to illness:

So you wanted to compose verses during your illness! That reminds me of Socrates, who (according to Plato) had a similar desire when he was in prison. I believe this poetic mood results from a strong agitation of the animal spirits. In someone who doesn't have a serenely stable mind, this agitation could completely disorient the imagination; but in someone with a more stable mind it merely warms things up a little and creates a desire to compose poetry. I take this

tendency to be the mark of a mind that is stronger and nobler than that of the ordinary person. (*Correspondence* 67)

Descartes is stating here that poetic expression is a result of agitated spirits, and that only one already strong of mind is capable of engaging in this enterprise without peril. Here we see a merging of Platonic and Aristotelian views on poetry. On one hand poetry can disturb the mind even further, similarly to Plato's corruption of reason. On the other hand, one who is strong in the mind (a virtue to be achieved) can utilize poetry to calm the animal spirits when agitated by circumstance. We recall that a key point for Descartes is that there is materiality to the imaginings of the body.

From this we can gather that there must be a certain physical state for creativity. Durs Grunbein elucidates this point:

...in the context of speaking of verse, a word lights up, *inclination*—meaning a certain disposition or leaning—which opens up a whole spectrum of scientific associations: from the geometry of conic sections,...to the deviations of a quivering compass needle from the horizontal, in a word: *inclination*. This implies that the mind as well must stand at a particular angle of inclination to the course of everyday life, be it due to sudden exaltation or racking illness, euphoria or dejection. Whether elated or depressed, the mind must be in a certain mood (the body slightly bent, perhaps, as in Albrecht Durer's engraving of the brooding angel), only then will the organism be jogged into creativity. For lines of verse to begin to flow, the tedium of a life numbed by habit must be interrupted—by some sudden event, however small, that shakes it up. Poetry cannot be written to order.

What is clear here is that Grunbein takes Descartes' assurances of the normalcy of writing poetry when in despair as an announcement of the disorder that must first be present to incline one (one of a strong mind, remember) to write poetry. We recall that for Descartes the body is a machine, and if the imaginings of the mind are material in nature, it follows that, for Descartes, the business of making art would be medicinal in nature. As Grunbein posits, "Poetry can be both a drug and a remedy" (21). How poetry may be an effective salve for the troubled mind is described in a letter from Descartes to his friend Mersenne concerning the concept of beauty.

Descartes on Beauty

Descartes barely touches upon beauty in his oeuvre. A single letter to his colleague Marin Mersenne in the spring of 1630 sheds only the dimmest of light upon Descartes' idea of beauty. Descartes responds to his friend's request for a definition of beauty:

You ask whether there's a discoverable essence of beauty. ... But in general 'beautiful' and 'pleasing' each signify merely a relation between our judgement and an object; and because men's judgements are so various, there can't be any definite standard of beauty or pleasingness. (*Correspondence* 13)

He then quotes himself from his treatment on music in *Compendium Musicae*,

Among the objects of the senses, those most pleasing to the mind are neither the easiest to perceive nor the hardest, but the ones that are not so easy to perceive that they don't fully satisfy the natural inclination of the senses towards their objects and not so hard to perceive that they tire the senses. (ibid)

He then explains to Mersenne what he means by "easiest to perceive nor the hardest" by means of an imagined garden. He states that if there are only one or two shapes in the garden then the

pattern as a whole will be easier to take in, but other people may prefer that there be more shapes to make the garden pleasing. “The one that pleases most people can be called the most beautiful, period; but there’s no way of fixing what this is” (ibid). He continues on to make a connection between memory and beauty, positing that the emotions stirred by beauty are attached to the emotions experienced when seeing similar beauty prior in our lives, making beauty a completely subjective experience. “What inclines some people to dance may incline others to weep. This is purely because it stirs up ideas in our memory: those who have enjoyed dancing to a certain tune feel a new wish to dance the moment they hear a similar one” (ibid)

Though insufficiently detailed, we can gather from these remarks some workable knowledge of Descartes’ greater views on beauty. First is the physiological effect beauty must have upon the soul. Since Descartes views memory as contained in the ‘animal spirits’ that cause the passions of the soul, memory is material in nature. It follows from the above then that beauty can make an impression upon our physical being which would situate beauty in the realm of medicine as its effects are to be found in the body.

Second, we can gather that as impressions of beauty are unique to every individual, they are indefinite and unclear and thus cannot be relied upon to generate a true essence of the beautiful. It is at this point we recall that Descartes defers judgments that lack clear and present truth to the culture at large. Therefore, we are reminded yet again of the “aesthetics shaped hole” in the Cartesian paradigm. As there is no consideration in the Cartesian epistemological hierarchy for the culture, let alone one the arts specifically, we are left wanting the means, methodologies, and modes of expression that would adequately pair such inquiries to the Cartesian paradigm.

With this discussion of beauty and the small concessions made in his ethical writings discussed above, it can be deduced that Descartes' abstention from creating an original moral code is in part owing to the incomplete nature of a purely theoretical philosophy such as his own. Descartes believed that his qualifications as a maker of moral codes fell short due a lack of knowledge of natural philosophy, but from the above it can be seen that a more complete knowledge of culture is required for an accurate moral compass.

CHAPTER 4

Introduction

Of the four pillars of the Cartesian paradigm, *mathesis universalis* presents some of the biggest challenges to aesthetic theory in terms of how the epistemological concept derived from *mathesis universalis* has been interpreted by later philosophers in ways that work against recognizing and pursuing possibilities for aesthetic theory internal to that paradigm. In this chapter, I discuss in detail how Western epistemology has, since Descartes, continually and unnecessarily marginalized types of knowledge germane to the arts and aesthetic philosophy when under the influence of the Cartesian paradigm.

It is worth making a statement of my personal epistemological views at this juncture. I advocate for a pluralistic understanding of knowledge and epistemic practices.⁴⁰ I do not mean to say that there are parallel means of generating knowledge—lines of thinking that never cross paths. I mean to say that the various paradigms of epistemology intersect, influence, and inform one another. This confluence is not only observable; it is also beneficial. Throughout the history of epistemological approaches, there is a consistent theme of unwarranted marginalization and exclusion of “other” modes of discovering and/or creating knowledge. This practice of exclusivity impoverishes any epistemological paradigm. This is especially evident in how treatments of epistemology rooted in the Cartesian paradigm and central to the thinking behind the scientific revolution marginalize the arts by perceiving them to be epistemically irrelevant. They overlook the fact that knowledge and experience of the arts provides a kind of second order knowledge that is essential for understanding ourselves as thinking beings. As seen in Chapter 3, Descartes himself understood knowledge of culture and custom (which would include aesthetic

schemas and the arts) to be essential for those moments when objective knowledge was not at hand.

As I present the history of universal language programs—a key component of *mathesis universalis*—I voice my objections to two assumptions that are traditionally made by those developing these programs:

- 1.) That all valuable knowledge is propositional
- 2.) That a reductive paradigm of knowledge creates universal knowledge.

The first objection I develop by means of exposing those epistemological practices that are marginalized by traditional Western concepts of knowledge. The second objection I make by means of rejecting any authoritative voice that would state that there is only one means by which knowledge is generated, and that any such means can accurately carry the label of “universal.” My exposition of the history of universal language games toward the end of this chapter is geared towards an analysis of the dynamics of the epistemological practices that follow in the original “footsteps” of Descartes’ vision of *mathesis universalis*.

***Mathesis Universalis* and the Exclusion of Aesthetic Philosophy**

Mathesis universalis has been traditionally understood as an epistemological practice exclusively interested in propositional knowledge. As such, those working on the project of *mathesis universalis* have traditionally excluded and/or marginalized types of knowledge that do not fall under the auspices of the proposition. As the overall topic at hand in this dissertation is aesthetics, I will discuss different views concerning the relationship between aesthetic philosophies and Western epistemological paradigms. Philosophers who critique and/or oppose traditional Western epistemic programs—namely Martin Heidegger and Hannah Arendt—object

to *mathesis universalis* largely in terms of its claim to “universality.” Rather than addressing the whole of their respective philosophies, I will keep focused on the concept of *poiesis* as they have both developed it, as well as on their respective views concerning the means of generating knowledge. The concept of *poiesis* opens to view a hitherto undiscussed epistemological potential, one that has been overlooked by those working within the traditional bounds of the Cartesian paradigm.

For *poiesis*, the epistemic dynamic at hand is one of *creation rather than of discovery*. Propositional knowledge has typically been understood more as universal knowledge than as other types of knowledge. This is due to the assumption that “discoverable knowledge” could be found out equally and similarly by any thinking being. However propositional knowledge is not the only knowledge of value in the Cartesian paradigm, as was noted in Chapter 3. That said, historically the methods employed in validating and expressing scientific (propositional) knowledge have been the consistent model for epistemic practices in the West, though knowledge of other types can be at stake. To clarify what is meant by this discovery/making contrast, these next sections delve into the tendencies within philosophy to consider only “discovery” work rather than to recognize an aesthetic, or “created,” dimension of knowledge acquisition. In so doing, those tendencies limit how the concept of knowledge is understood, with consequences detrimental to the theorizing of modern epistemology. I will argue that the concept that knowledge must be only something “discoverable” is erroneously limiting, and the prevalence of this concept does significant harm to modern Western ways of theorizing both knowledge and its acquisition.

Picking Up. Vs. Setting Down Knowledge

Descartes idealizes knowledge as something that can be either gathered or gained—*picked up*, as it were—and then codified by means of mathematics—mathematical notation (either algebraic or geometric) being for Descartes the most universal and precise language available. As discussed in Chapter 1, we must recall that Descartes' pillar of *mathesis universalis* is predicated on an objective worldview, which in turn is predicated on an object/subject divide and a certainty of self. The pillar of *mathesis universalis* can be understood as, dynamically, a process of organization and codification of facts, laws, taxonomies, and patterns about the natural world—the natural world as inhabited by the thinking subject. For this reason, Descartes would have understood a piece of information about the natural world, like gender for example, to be information that was to be gained and not created.

In the last two centuries, however, there has been a remarkable shift in ideas about the conditions and circumstances that shape the mind's view of the natural world. Many of the concepts that for Descartes were presumed to be set down by nature, and so were viewed as simply being there for the human mind to pick up, comprehend, and then exploit, are now understood to be created by culture and custom. Judith Butler, for example, considers gender to be not a scientific or biological fact, but rather a cultural construction. This is a prime (if not particularly contentious) example of the types of knowledge that need not be viewed as simply *picked up* from the natural world. Thanks to Butler's groundbreaking book, *Gender Trouble* (1990), we now can understand that information about gender need not be knowledge to be gained—but rather might be knowledge created and *set down* by culture and individual performance. This is knowledge of the natural world that is not picked up and then set down. It is knowledge made via performance, which is then set down. In other words, the knowledge can be created and upheld aesthetically.

As a counter-example, the laws of Newtonian natural physics were discovered (*picked up*) and then *set down* in terms that could be cemented by some significant means. In this case the knowledge wasn't created, but the means to set it down (to codify or inculcate) were created. The mathematical language that those laws could be expressed in had to be generated by the human capability for abstraction, and the means to test and prove (or more importantly disprove) had to be established and solidified by a culture of people who also believed the natural world conforms to a codified system of logic and is objective in nature. In the case of Newtonian natural law, both circumstances are met. In the case of Butler, gender (the knowledge at hand) is set down by the norms and customs of those in power, which is then maintained by performative practices⁴¹ of individuals. The trouble is, performance, unlike science, which has an explicitly described program of means and methodology, is not possessed of a universally codified means of expression nor a methodology of proving or disproving the knowledge at hand.

As discussed in the previous chapter, we understand that the conception of the soul as it is set down by the Cartesian paradigm is incomplete. There is a clear call on Descartes' part for a means of expressing the soul but none is ever provided, which leaves a glaring hole in the Cartesian paradigm. I maintain that this incompleteness of the Cartesian paradigm is the driving force behind those philosophers who inherit the project of creating a truly universal system of explaining the natural world. In contemplating these facts, I am compelled to discuss the significant means by which knowledge is set down. In this chapter I work through the most authoritative means of setting down knowledge in place today, which is largely the mathematicised systems of universal expression and universal logic that have developed in the wake of the Cartesian paradigm. I begin this discussion with an examination of the claims of both rationalists and empiricists. Each camp finds that knowledge is to be gained, not created,

and each of their approaches both underscores the concepts of picking up and setting down knowledge. I will next posit *poiesis* (particularly in relation to the art of painting) as a significant means of creating and setting down knowledge. Following that, I will elaborate on the kinds of knowledge that *poiesis* can and cannot establish.

Empiricism Vs. Rationalism Germane to Aesthetics

Philosophy is literally translated as “love of wisdom.” All philosophical questions germinate from the study of truth, or what we know as truth (knowledge). Aesthetics, while specifically focusing on the relationship between knowledge and concepts such as quality, experience, beauty, and creative will, must also in some way support answers to the broader questions of philosophy: What is the nature of knowledge? What are the limitations of knowledge? How do we gain knowledge? The last of these questions is of particular importance to aesthetic philosophy and springs forth from the very old debate between empiricism and rationalism. In these oppositional viewpoints, knowledge can only be *gained* (picked up) by limited means. In the rationalist camp there is a great emphasis on the “innateness” of certain structural concepts (the a priori) and as such knowledge is formed based on those innate (and universal) structures. In the empiricist camp, there is an insistence on a posteriori as the primary source of knowledge, and therefore knowledge is often contingent upon the many facets of one’s experience. But neither camp understands knowledge as something that can be *created*. They both work from the original premise that knowledge is *gained*. They both understand knowledge as that which is picked up and not that which was set down. Neither rationalist nor empiricist theses speak of the crafting of knowledge. It is through this exclusion of the idea that knowledge

might be made rather than found that leads to the marginalization of aesthetic discourse from the larger discussion of epistemology.

An examination of the epistemological theses of these two groups reveals that knowledge, for both empiricists and rationalists, is by definition *gathered*, albeit by radically different means—by either some innate programming of human cognition or by the information conveyed through sensorial experience. Neither means includes material about knowledge that is created, yet neither means precludes such knowledge. In the interest of concision on the topic of these theses—a topic that could be (and has been) explained extensively—I offer a summation based on Peter Markie’s expertise on the subject⁴². In the camp of rationalism, five basic theses arise. To be considered rationalist you must agree with at least one. The more radical the rationalism, the more of these will be warranted as true. The variable “S” is used to describe an area of investigation.

1. The Intuition/Deduction Thesis: Some propositions in a particular subject area, S, are knowable by us by intuition alone; still others are knowable by being deduced from intuited propositions.
2. The Innate Knowledge Thesis: We have knowledge of some truths in a particular subject area, S, as part of our rational nature.
3. The Innate Concept Thesis: We have some of the concepts we employ in a particular subject area, S, as part of our rational nature
4. The Indispensability of Reason Thesis: The knowledge we gain in subject area, S, by intuition and deduction, as well as the ideas and instances of knowledge in S that are innate to us, could not have been gained by us through sense experience.

5. The Superiority of Reason Thesis: The knowledge we gain in subject area S by intuition and deduction, or have innately, is superior to any knowledge gained by sense experience.

Empiricism has, truly, only one thesis to follow and it is more rejection than stance: “We have no source of knowledge in S, or for the concepts we use in S, other than sense experience.” Markie makes quick work of the counterclaims of empiricism to the rationalist theses: To reject 1 and 2, empiricists claim that insofar as we have knowledge in the subject, our knowledge is a posteriori, dependent upon sense experience. To reject 3, they propose that sense experience is our only source of ideas. To reject 4 and 5, empiricists hold that it is understood that reason alone does not give us any knowledge, certainly not any superior knowledge.

Markie does note that not all rationalist theses must be discarded for an empirical argument for epistemic nihilism:

Empiricists generally reject the Indispensability of Reason thesis, though they need not. The Empiricism thesis does not entail that we have empirical knowledge. It entails that knowledge can only be gained, if at all, by experience. Empiricists may assert, as some do for some subjects, that the rationalists are correct to claim that experience cannot give us knowledge. The conclusion they draw from this rationalist lesson is that we do not know at all. (Markie 1.2)

What should be understood about the debate between these two philosophical standpoints is that they are not always in opposition. The field of mathematics, for example, is largely dominated by rationalist discourse, and empirical evidence plays a secondary role. Aesthetics, being so deeply couched in terms of the qualitative, is dominated by empiricist discourse. The imagined scenario of a fiercely debated, polarized disputation on this topic is largely due to the historical narrative

of the rise of the Cartesian paradigm until the advent of Kantian philosophy. Any real contemporary debate between these two camps comes down to the question of superiority when determining truths about the world beyond our cognition.

As demonstrated by the above discussion of epistemological theses, the two camps are aligned in that they both understand knowledge as picked up (“gained” is their own terminology) and are silent on the idea that knowledge can be created by any means. Though empiricists do grant the influence of subjective circumstances tremendous sway over our points of view, and thus over what we take to be knowledge, they do by and large accept the premise that the laws of the natural universe are objects that exist prior to our understanding of them.

What neither camp discusses, however, is the validity of information that is fully artificial or arbitrary, but just as real as any law of physics. Simply put, the idea that knowledge that is arbitrarily or artificially made, no matter how useful or expressive of reality it may be, is not considered knowledge at all and therefore is taken as unable to represent truth. This is because both camps are proceeding from the idea that knowledge of the natural world is precursory (*primum*) to cognition’s observation or engagement. But as no “chicken-or-the-egg-type” discussion over what came first ever yields a satisfactory solution, it is time that this schema of superiority over that which is *primum* be abandoned for a more realistic understanding of knowledge.

The assumption for scientists has traditionally been that they are pursuing what pre-exists our observation and engagement. The idea is that those objects that are artificial do not possess the same neutrality—meaning that they are unaffected by human intervention or observation—as those objects that are of the natural world. Belief in this neutrality of the natural world around cognition, along with the belief that cognition is only observing the world around itself, is

fundamental to the Cartesian paradigm. However, one may easily acknowledge that those schemas that serve to catalogue, express, and codify knowledge are created by the human consciousness without disrupting the Cartesian paradigm. Descartes' call for a system enabling the generation of knowledge in *Rule IV* confirms that he did not intend the thinking being to simply stumble across the means of organizing knowledge. He intended for human beings *to create* that means. Since Descartes' time, much attention has been given to commentary on the means of "knowing."

Most significantly, it is now understood that the cognitions that preceded one's existence—that is to say the means by which those before you have understood the world- have as much to do with our own understanding of the world as our own contemporary observations and experimentations. More importantly we can understand that the pre-rational cognitions of the mind, both individually and collectively, shape the formation of rational knowledge. This last revelation is discussed in depth in the later sections of this chapter. For now, it is sufficient to understand that though the Cartesian paradigm understood knowledge as that which is discovered, it does not preclude or exclude the study of knowledge that is created. As an example, the field of Art History is dedicated to the study of (and the relationships between) the cognitive processes, philosophical discourse, physical methodology, and material structure of objects made by human means. It is a field, therefore, comprised entirely of observations and knowledge about that which is created.

Epistemology and Aesthetics

Knowledge, as it is today, is Cartesian in nature—driven by science, and aimed at being objective. It seeks knowledge that is discovered, though it does not necessarily need to exclude

created knowledge. The epistemological paradigms developed towards the project of *mathesis universalis* that are in place today (discussed in depth in this chapter) continually marginalize and exclude subjective and created knowledge. Simply put, they are generally suited for objective and scientific knowledge.

Most philosophers, contemporary or otherwise, don't readily associate objective and scientific knowledge with the arts and aesthetic concepts. But when objective knowledge is broken down into the two major categories of propositional and revelatory knowledge (discussed below) we find that works of art often are studied for their revelatory value. However, the concept of revelatory knowledge is difficult to define and provides only a limited means to include the arts and aesthetics in the traditional understanding of *mathesis universalis*. In these next paragraphs, I will show how a new paradigm on the concept of revelatory knowledge and the art of painting, developed by James M Thompson, reveals an unexpected epistemological contribution to the Cartesian pillar of *mathesis universalis* from Martin Heidegger—one of Descartes' most vocal opponents.

In order to better define revelatory knowledge, a very brief explanation of contemporary epistemology is necessary. The paradigm of knowledge as it is understood today (largely established by Descartes, Hegel⁴³, and Schopenhauer⁴⁴) allows for two basic types of objective knowledge: that which is propositional, and that which is revelatory. Propositional knowledge invokes words such as: concept, premise, principle, hypothesis, etc. This is the type of knowledge that can be imagined as tangible (though it is very often theoretical), robust, and structurally integral to scientific fields. It is typically narrow in scope and specific in its application. Revelatory knowledge is less readily defined. Perspective, relativity, and causality are terms that pepper the scholarship concerning revelatory knowledge. While the character of

what can be at stake in revelatory knowledge varies (social conditions, historical contexts, moral implications, etc.) we can find a common element within a broader dynamic. All articulations of this type of knowledge involve a widening of the scope and “stepping back” from established discourse. It should be stated that propositional and revelatory knowledge are not oppositional in nature. They are integral and create a cooperative check-and-balance relationship. One can use propositional knowledge to verify revelatory knowledge. Revelatory knowledge provides a measure of the validity of propositional knowledge. Both can inform moral judgements, although most often the revelatory serves to critique the structure and consequences of the propositional (read: scientific) epistemological schemas.

A most valuable resource for this discussion is Thompson’s treatment of revelatory knowledge germane to the topic of painting. *Painting and Knowledge: The Revelation Theory* is helpful in illuminating the properties of both propositional and revelatory knowledge, as well as their respective roles in the scope of contemporary aesthetic dialogue. Though he largely approaches claims made by existentialist philosophers such as Heidegger and Merleau-Ponty, his essay contributes greatly to our discussion of *mathesis universalis*. What is most interesting is that in his approach to illuminating the many means by which revelatory knowledge might be gathered from a painting, Thompson unknowingly makes Heidegger a contributor to Descartes’ project of *mathesis universalis*.

I will briefly sketch Thompson’s schema. Not only does it add leverage to my argument that Thompson makes an unwitting Cartesian-ally of Heidegger’s aesthetic views, it provides a concise explanation as to what the phrase “other types of knowledge” might entail. Thompson states that for revelatory knowledge to be gained from a painting, it must fit specific criteria, particularly in relationship to philosophy and science. He first establishes an impermeable line

between propositional knowledge and revelatory knowledge. Works containing revelatory knowledge either do not contain propositions, or any propositions they may contain are not the main source of cognitive value. If contrast may be drawn between showing and stating, revelatory knowledge belongs more to the showing idiom. Typically, revelationists claim that what cannot be stated in straightforward propositional form can be revealed in painting and other art forms. Conversely, that which can be revealed in painting cannot be translated into an equivalent propositional form (Thompson 211-12). Thompson next subdivides revelatory knowledge into two types:

Type A.) That which reveals a slant, or particular point of view

Type B.) That which reveals things “how they are, not just how they may be looked at.”

Knowledge of Type B requires no defense or evidence, and can be, by Thompson’s reasoning, either rational or empirical in nature. Philosophers such as Schopenhauer, Heidegger, and Merleau-Ponty all draw upon this idea, as they all postulate that experiential intuition guides our understandings of the world and ourselves.

The overall character of Thompson’s careful examination of revelatory knowledge (specifically on the topic of paintings) is, in essence, a warning against hasty declarations of Type B knowledge. Claims of Type B knowledge, as Thompson sees it, are difficult to validate since verification through traditional analytic means (false positives, for example) is nigh impossible. The purpose of his discussion is to provide a set of litmus tests that scholars should apply when claiming a painting offers this or that type of knowledge. He classifies the ways a painting might hold Type B revelatory knowledge as such: visual qualities, characteristics, essences, recurrent characteristics, a transcendent reality, the nature of man, and a quality of experience. That paintings can reveal visual qualities that might otherwise be missed outside of

the context of the work is an easily granted claim, but one that does not apply to all paintings. Characteristics of objects, people, and situations, as of essences and recurrent characteristics, are certainly revelatory, but arguably in the sense of Type A knowledge- they may only reveal a specific view or circumstance. The idea that paintings can transcend reality (à la Schopenhauer and Hegel) is also of Type A, as the nature of reality (not to mention that which would transcend it) is still a disputed topic. All of these only serve to reveal points of view or observations of specific subjects by those in familiar proximity to the work of art.

I find Thompson's disregard of Type A to be unnecessary, however. As socio-political and social-psychological paradigms have been developed since the time of Descartes, and largely due to the Cartesian paradigm (as we discussed in Chapter 1), establishing and communicating points of view ought to be understood as a valuable epistemological endeavor. The knowledge provided, though not universal in nature, is objective by its singular, specific, and finite characteristics. Propositional statements are also meant to be singular, specific, and finite. As such it would seem that Type A knowledge would provide historical and political value, which should not be easily disregarded. That said, it is *universally objective* types of knowledge Thompson is concerned with, and his last two means of Type B knowledge have more to offer our discourse concerning Descartes. As such, I will make my objections to Thompson's disregard for "viewpoints" as stated above. The last two categories of Type B revelatory knowledge (the nature of man and quality of experience—also referred to as ontological orders by Thompson) are of particular interest to the aims of this dissertation. Thus, I will pursue them in more depth in these next paragraphs.

Within Thompson's analysis of the ontological orders (quality of experience and the nature of man) of revelatory knowledge there is a tacit acknowledgement that knowledge is made

rather than created. For this particular means of generating knowledge, he largely refers to Heidegger's position on the arts, developed in *The Origin of the Work of Art* (1950). Knowledge about the "objective order or quality in experience," Thompson claims, is based upon Heidegger's own paradigms of Reality. Briefly, Heidegger developed the idea that paintings not only reveal "what is," but that they can also produce "what is." His famed examination of Van Gogh's *A Pair of Shoes* reveals a tension between "earth" and "world" that in the end generates a kind of knowledge that pertains to both. *World* denotes the ontological state specific to some sphere of being (a family, a career, a social strata, etc.), and *earth* being the physical background upon which "worlding" occurs. There is a nearly mystical blending of materiality, intuition, and purpose with this conception of art. But what Thomson's analysis reveals as unique to Heidegger is the idea that instead of art revealing some already existent truth, art is the setting down of truth—changing the mode of knowledge from that what must be discovered to that what can be made.

While it is not surprising that Heidegger would approach knowledge in such a way, it is important to note that Thompson's essay is not a critique of the views of philosophers—it is foremost a means of establishing the types of *revelatory knowledge that may be gleaned from a painting*. The acknowledgement of the validity of Heidegger's approach towards the arts as a contributing means of gathering objective, revelatory knowledge—that is to say, contributing to the project of *mathesis universalis*—is established by Thompson's work on the modes of revelatory knowledge available from paintings. Simply put, I argue that Thompson (perhaps unknowingly) is acknowledging that Heidegger—though generally opposed to the objective/subjective modeling of knowledge that is the backbone of *mathesis universalis*—has

contributed to the concept of objective knowledge through understanding the arts as sometimes offering revelatory knowledge.

Poiesis as an Epistemological Practice

Up to this point in the Chapter we have briefly examined the structural elements of contemporary Western epistemology (built upon the Cartesian pillar of *mathesis universalis*) and the varied relationships to types of objective knowledge that are created rather than discovered. Through this discussion we have pointed out several avenues through which one might amend the Cartesian project of *mathesis universalis* to include aesthetic concepts and the arts. However, each of the various avenues presented in this chapter and the previous three are often highly limited in scope and/or application. For example, Thompson's work on revelatory knowledge from above is solely germane to painting. Many of the means by which he elucidates "testing" for the presence of revelatory knowledge could only be applied to the visual arts, leaving non-visual art forms such as music, poetry, literature, etc. outside the proper scope of his paradigm. As discussed in Chapter 2, ties are made between Descartes and contemporary subjective studies do exist, but their development is often limited to a passing acknowledgement. With this next section I will explore the concept of Poiesis as a more robust means of including aesthetic discourse within the pillar of *mathesis universalis*.

It is at this point we must turn to the idea of universals and universalization, as this presents the largest problem to inclusion of aesthetic discourse in this most prevalent pillar of the Cartesian paradigm. What is difficult to reconcile to the original intentions of *mathesis universalis* is the specificity of aesthetics and the arts in relation to individuals, different cultures, and even different historical eras of the same culture. This individualistic quality makes the

challenge of “universal” knowledge most difficult. Even Thompson, in the essay discussed above, acknowledges this challenge, by bringing up the problem I would refer to as the “all paintings vs. some paintings dilemma.” He puts it simply as this question: “Is it really the case that all paintings have a cognitive, revelatory significance?” (216). Thompson is referring to the idea that it is not universal knowledge if it is only the truth in only some instances. He also touches on the limitations of revelatory knowledge as verifiable by traditional means—the well-known scientific means of false positives, empirical research, etc. are not means by which one can validate claims of revelatory knowledge. So having established that objective revelatory knowledge can be gained by the arts, but only when specific criteria are met, I now turn to the concept of “universal” knowledge, as it was a key part of Descartes’ vision for epistemology and an area that has largely been left unconsidered as a means of connecting aesthetics and Cartesian epistemology.

Universalization of knowledge can be accomplished by practices of inclusion or practices of exclusion. One can either decide to exclude or marginalize some knowledge in order to make a paradigm work, or one can work to shape the paradigm to fit all knowledge. In both cases, the general aim of universalization is to make knowledge consistent, fixed, and readily available. In the hard sciences universalization is generally reductive and necessarily exclusory—due largely to the radical rationalism and hyperbolic doubt of Rene Descartes. All the systems of universalization from Descartes’ original idea of *mathesis universalis* onwards have attempted to excise the unnecessary, the complex, and the unclear from view in order to establish a uniformity of expectation, procedure, and results. The scientist removes nearly all of what is *already there* in search of what is *always there*. Universality for the sciences is thus an act of exclusion. This exclusivity has had a tremendous impact upon the consciousness of the West. But as discussed

above, it has been largely aimed at knowledge “discovery.” And while certain opportunities appear throughout the development of *mathesis universalis* since Descartes’ time, there has been little attention paid to formulating a paradigm of *universalized created knowledge*.

In the previous section we established, thanks to the work of Thompson, that Heidegger, though opposed to the concept of *mathesis universalis*, establishes a means to contribute to it. In this next section we find that it is again Heidegger, Descartes’ most avid opponent, who leads the way for a further and more grandiose contribution to Western epistemology with the development of his concept of *poiesis*.

Poiesis as Knowledge Making

Poiesis is the making and setting down of revelatory knowledge— more specifically the making of the units of *mathesis*. *Mathesis*, means that which can be learned as well as that which can be taught⁴⁵. The term, which encompasses both actions of learning and teaching, also refers to the systematic laying down of knowledge. It is the moment when a decision about the shape, character, and positioning of a unit of knowledge is made, and that unit of knowledge is mortared into its proper place in the structure of what we contemporarily understand to be *mathesis universalis*. Descartes’ conception of *mathesis universalis* did not include outlets for the making of knowledge. But as discussed above, revelatory knowledge constitutes a second order type of knowledge that informs us of ourselves. It is not knowledge that is only discovered; it is more often knowledge that is created. As an investigation of what is entailed in the creation of knowledge is warranted, we turn now to the concept of *poiesis*.

Derived from the ancient Greek term ποιέω, which means "to make," *poiesis* also means “setting forth” and holds connotations of “moving of the world forward.” In the *Symposium*,

Diotima (Plato) describes how mortals strive for immortality in relation to *poiesis*. "Such a movement can occur in three kinds of *poiesis*: (1) Natural *poiesis* through sexual procreation, (2) *poiesis* in the city through the attainment of heroic fame, and, finally, (3) *poiesis* in the soul through the cultivation of virtue and knowledge." Plato is describing three means to gain historical immortality (fame), but in our contemporary minds the axiomatic and irrefutable are all that we understand by "immortal." Immortality, in terms of epistemology, is really only granted to the fixed and confirmed, and I dare say, the useful. Laws of physics are granted immortality when they are proven axiomatic and irrefutable, and therefore foundational in nature.

If one accepts this contemporary view of immortality, then these three processes—originally described as the processes by which immortal beauty is made—need to be updated as well. Fully renovated these three means are:

- 1.) Synthesis (the merging of at least two existent objects; these two objects can be rational or empirical in nature)
- 2.) Empiricism (experimentation and observation)
- 3.) Abstraction (rationalism, mathematical modeling, and, often, imagination).

As Plato's conception of beauty, it can be agreed, had little to do with visual or sensorial pleasure, the beauty he refers to must be understood as that which is perfectly harmonious (i.e. Ideal). In our modern sense of epistemology, that which is harmonious is that which is clear, certain, and unwavering. As it may seem a stretch to be moving from a description of the coping mechanisms of mortals that Diotima describes to the means of epistemology, let us be reminded that the sciences pursue that which is always true, despite the passages of time. Ergo, science is the pursuit of that which is eternal despite a human being's ephemeral nature. Owing to Plato's derision of the arts as mimetic and thus in principle they are unclear and misleading, the arts

have naturally been neglected as a means of knowledge making. Revelatory knowledge (differing from the propositional knowledge of science) is a necessary pursuit as it informs moral and ethical practices. As Descartes believed that morality would necessarily follow in the wake of a complete grasp of the natural world, he gave privilege to scientific knowledge. However, despite clearly defining what does and does not constitute the means of propositional (scientific) inquiry, Descartes did not address the proper means of revelatory inquiry, but instead simply states that where rationalism fails us, we are to turn to the laws and customs “at hand”. As moral and ethical practices cannot be informed by the sciences, until the sciences are “complete” one must then rely upon culturally informed practices. The arts would almost certainly fall into that category. As such, painting is a means of expressing or creating revelatory knowledge.

While I propose a new way of viewing *poiesis* as the act of making knowledge, it is necessary to address those philosophers who have fleshed out the contemporary definition of the term *poiesis*. Most notable and most recent are Martin Heidegger and Hannah Arendt, though their viewpoints on the term carry different connotations. Heidegger instills a mystique around *poiesis* as that which reveals, and thus allows Dasein (human existence) to carry on. Arendt views *poiesis* as among those first movements away from the bondage of labor as a means to biological ends. In the following sections I will unpack both philosopher’s use of the term *poiesis* and relate the two definitions to the specific arena of painting.

Poiesis as the Antithesis of Mathesis

Heidegger models his schema of Dasein’s being to include the concepts of “world” and “earth.” Earth is the physical realm upon which our being must take place. This inclusion of the material keeps Dasein grounded and avoids nihilistic tendencies towards the sciences. Earth, for

Heidegger, would be the realm of propositional knowledge. World is the realm of the revelatory where knowledge is not necessarily *only* gathered (as Descartes would have understood knowledge to be) but can be created by certain acts of will—acts such as making art. The act of making art is an act of *poiesis*, but not the only act of *poiesis*. It is easy to see how one could hastily equate the words *mathesis* and mathematics, for example, but mathematics is only a small piece of *mathesis*. Similarly, an incomplete equation between *poiesis* and poetics is often made. However, I will argue in the sections to follow that *poiesis* is the act of moving the “world” (the ontological state of Dasein) forward through the establishment of some piece of knowledge. The establishment of propositional knowledge, for the last four centuries at least, is accomplished through scientific methodology established by the Cartesian paradigm. As the Cartesian paradigm made no remark on revelatory knowledge, there is more contention to be had on the proper ways to establish revelatory knowledge. Heidegger as well as Hannah Arendt will extend the discourse about *poiesis*, adding to our understanding of this term.

Heidegger shows a consistent backwards gaze in terms of the historical unfolding of philosophy—ever idolizing those who came before the “event” of Socrates (Plato). Heidegger also acknowledges that the course of philosophy, as it would concern ontology, has been equally redirected by the Cartesian paradigm, and by its trappings of hierarchical order, *mathesis universalis*, and strictly rationalist epistemology. The question of whether Plato or Descartes holds more responsibility for contemporary conditions is a topic for discussion elsewhere, but what is intriguing about both is their dismissal of poetics as an unreliable source of truth about this world—a point Heidegger sidesteps neatly by implying that art does not reveal this world, but another “world.” Heidegger is particularly enamored with *poiesis* as an example of pre-Socratic philosophical discourse. Ever looking for the “thing-that-was-before-it-was-covered-

over,” the nature of his work is to mine revelatory knowledge (as phenomenology and ontology are his domains) for those moments of disclosures of Being. Alexander Di Pippo crystallizes Heidegger’s interest in the idea of *poiesis*:

Poiesis is a mode of disclosure (a-letheia) of Being which is conceptually broader than, and so can assume the modality of, either philosophical or poetical discourse. Otherwise put: the concept of *poiesis* furnishes the analogical unity of the poet and philosopher. Poiesis becomes the original site of Being's disclosure, whether this becomes thematic in the case of the philosopher or unthematic in the case of the poet. (3)

Specifically *poiesis* is one of the many acts by which Dasein (the experience of being that is particular to humans) transcends what Heidegger feels is the modern condition—referring to Being as that which is undisclosed, covered over by the subject/object dichotomy, positivism, and technological domination. For Heidegger, the world (*welt*) is not a mere parade of objects that the mind encounters. Nor is it something that contains them both. For Dasein, world is the space of significance (*Bedeutsamskeit*) by which it directs itself in its concerned dealings—these being biological needs, social interactions, family life, etc. The space of significance refers to the paradigm under scrutiny. This is the conservative angle of Heidegger’s philosophy. He desires a revealing of that which was at a time before Descartes’ dualism and before Plato’s criticism. “There only is a world because Dasein, in its basic constitution, is worldly (*Weltlich*). Thus, the unitary phenomenon of *poiesis* belonging to the worldliness of Dasein's Self displaces a subject-object dualism” (Di Pippo 8).

The subject/object dualism of the Cartesian paradigm is a feature of the facticity of being for contemporary humanity. Facticity refers to the ascribed, preset conditions of human

existence, such as language, political atmosphere, and geography. In terms of the individual, facticity—referred to by Heidegger as thrown-ness—is revealed by mood. By Heidegger's own paradigm of Dasein, however, the thrown-ness of our Being does not allow for a return to a unified existential experience. There can be no re-unification of object and subject due to the thrown-ness of our contemporary existence. Only revelation of Being-at-present can allow for any real reflection and action. In art, a form of *poiesis*, those revelations are made possible by the opening of a world beyond ours in which our being can be revealed. *Poiesis* is intimately tied with material and production. In production, the artisan not only shapes his or her material such that it embodies the projected model, but in so doing also liberates this material from its dependence on the artisan until, when it eventually achieves this likeness, it obtains an independent being-in-itself. Until this fulfillment obtains, the object is not fully present to itself. Since achieving this presence is the telos of production, presence-at-handness is not only an integral component of the production process but it is also the productive intention (Di Pippo 13).

It is through art that Dasein encounters materials as being-at-present (Vorhandensein: one may liken this to a moment of clarity about Dasein's being) rather than being-at-hand (Zuhanden: one may liken this to a moment of equipmental-ness). The former is tied directly to Heidegger's idea of moments that allow a revealing of Dasein to itself. It is beyond everydayness. The latter is tied to the Western philosophic tradition and understands means of production as means of being-in-the-world. It is entwined with everydayness and does little to reveal Dasein to itself. This indicates that there is an inherent sense of critique and revelation to Heidegger's *poiesis*.

Poiesis by this account cannot provide knowledge of a propositional nature. Nor would it need to. There is nothing to indicate that poiesis in this sense could provide concrete, fixed knowledge of an objective worldview. What poiesis can facilitate is a revealing of what is (necessarily by definition of Dasein) temporarily so for Dasein—and particularly revealing the world as it is in relation to Dasein. In *Mathematics, Metaphysics, and Modernism*, Heidegger states simply: “Mathesis means learning, mathemata what is learnable... The mathemata is about things which we already know... The mathematical is that evident aspect of things within which we are always already moving and according to which we experience them as things at all, and as such things” (251-4). The mathematical is the fundamental position we take towards things by which we take up things as already given to us, and as they must and should be given.” Heidegger credits Newton with our first understanding of “modern sciences” as they are now as he tried to establish “principia”—first principles. “All great insights and discoveries are not only usually thought by several people at the same time, they must also be rethought in that unique effort to truly say the same thing about the same thing” (257). Yet the advent and persistence of the mathematical can be traced to Descartes, well before Newton.

For Hannah Arendt, poiesis is strongly tied to her ideas of humanity as a working species. As Arendt’s work does not form as tightly-knit of a system of philosophy as her mentors’ (Heidegger and Karl Jaspers), we must work from the available references to poiesis in her writings, primarily those found in *The Human Condition* (1958). Largely focused on political ontology, she sees humanity in three basic modes: labor, work, and action. In this tripartite hierarchy, Labor (animal laborans) is the first state of being. It is associated with all the biological necessities of life and generates nothing of permanence. It is what maintains the human being as a slave, as it stands in direct contradiction of human freedom when a person

must be constantly concerned with the banal. This is opposed to Marx's view of labor as the linchpin of humanity's power. She instead understands labor to be more akin to a survival state.

The arts belong to Arendt's second mode of existence: work or *homo faber*.

Encompassing both *techne* and *poiesis*, in this mode humanity is separating itself from the natural world. "He/she is the builder of walls (both physical and cultural) which divide the human realm from that of nature and provide a stable context (a "common world") of spaces and institutions within which human life can unfold" (2.iii) This includes making buildings, laws, the arts etc. It is a clear break from labor as it is humanity shaping the world to its own intentions and plans rather than in response to biological needs. Work is a public matter as it is governed by humanity as opposed to those biological needs of labor, which remain largely private in scale in this modality. Work is not yet political and not yet the true manifestation of freedom, but is an important precursor to the ultimate mode of the political: action.

This third and final mode of humanity, action (*zoon politikon*), is Arendt's idealistic state of being in which work is no longer a means to an end (thus tying it to purposiveness) but an end in itself. "The fundamental defining quality of action is its ineliminable [sic] freedom, its status as an end in itself and so as subordinate to nothing outside itself. Arendt argues that it is a mistake to take freedom to be primarily an inner, contemplative or private phenomenon, for it is in fact active, worldly and public" (Yar, 2.iii). In contrast, for Heidegger, *poiesis* can be a moment of clarity through a united experience of subject and object, but requires a level of remove from the equipmental that is difficult to achieve in practice. It requires a remove from the everyday that is so unnatural that, while it may reveal something about being, does not allow for easy assimilations of those revelations.

In the case of both Heidegger and Arendt, the philosophers require a kind of remove from the everyday that is difficult to reconcile in real practice. For Heidegger, only when equipmentality is removed do we approach poiesis. The knowledge given by poiesis would then only apply to the ontological, and would not provide information about the natural world—only a scenario of being in the natural world. Arendt moves in a similar fashion by declaring that poiesis is a means of removing oppressive features (such as labor control and dependency upon labor). Both assume that poiesis is a concept reserved for aesthetics and neither gives credence to the idea that poiesis could be a means of communicating or establishing knowledge. In essence, they are limited by their own conception of what poiesis can entail. Heidegger and Arendt both limit poiesis to the making of art, and not the making of knowledge. In this dissertation, I posit poiesis as a means of setting down knowledge, just as universal languages are means of setting down knowledge.

Wordsworth

Poetry is the first and last of all knowledge—it is as immortal as the heart of man. If the labours [sic] of Men of science *should ever create any material revolution, direct or indirect, in our condition, and in the impressions which we habitually receive, the Poet will sleep then no more than at present*; he will be ready to follow the steps of the Man of science, not only in those general indirect effects, but he will be at his side, *carrying sensation into the midst of the objects of science itself*. The remotest discoveries of the Chemist, the Botanist, or the Mineralogist, will be as proper objects of the Poet's art as any upon which it can be employed, if the time should ever come when these things shall be familiar to

us, and the relations under which they are contemplated by the followers of these respective sciences shall be manifestly and palpably material to us as enjoying and suffering beings. If the time should ever come when what is now called science, thus familiarized to men, shall be ready *to put on, as it were, a form of flesh and blood, the Poet will lend his divine spirit to aid the transfiguration, and will welcome the Being thus produced*, as a dear and genuine inmate of the household of man. (Wordsworth, Preface to *Lyrical Ballads*)

For the purposes of this dissertation there is a presumed synchronicity to certain terms, particularly in the context of Descartes' lifetime. Mathematics, science, and philosophy, until the mid-nineteenth century, had yet to be truly specialized from one another, especially in terms of epistemological merit. All of these fields, known to us today to be separate pursuits, were still entwined in the concept of philosophy. In Wordsworth's Romantic Age, objectivity and science were shunned in favor of emotion and individualism in what some would consider a pendulum swing of human interest.

Wordsworth seems to exactly understand what is at stake with the conception of Poiesis as knowledge making. From the above quote we see that Wordsworth understands that the efforts of creating, materializing, and setting down knowledge requires skills beyond that typically attributed to those who seek out objective knowledge. As such, he acknowledges the incompleteness of an epistemological paradigm that does not include those concepts germane to creating and to solidifying knowledge. Rather than simply pointing out the incomplete nature of *mathesis universalis*, he provides the completing piece in naming "the Poet": "If the time should ever come when what is now called science, thus familiarized to men, shall be ready to put on, as it were, a form of flesh and blood, the Poet will lend his divine spirit to aid the transfiguration."

It has been argued by some that science, as Descartes would have understood it to be, is reaching a terminus as far as knowledge of the natural world. They would say that the kind of mapping that *mathesis universalis* was originally intended to accomplish has largely been achieved. That is to say, the *universalis* (that which is objective about the natural world in terms of physics, mathematics, chemistry, and biology) has been sufficiently (though not completely) “set down” that our attentions, as inquirers, must be turned to that which is objective though not necessarily universal.

***Mathesis Universalis* and the Systems of Universalization**

The normative function that *mathesis universalis* has maintained over not only the hard sciences but academia as whole has been consistently at the expense of aesthetic discourse. In this section I will unpack the progression of *mathesis universalis*, and the subsequent influential systems of universalization and related concepts of universality that have developed in the wake of the Cartesian paradigm. As Descartes put out the call for the development of a *mathesis universalis*, it is important to bear in mind that his conception of this term is tripartite. He meant it to encompass a body of fundamental knowledge, a strict method of inquiry that guarantees certainty, and a codified means of expression. Of the three, the means of expression has been given the most privilege in terms of philosophical discourse. The development of a universal language that best accounts for all that can be expressed (or should be expressed) is a project that has squarely divided philosophers.

Each successive system of universal language has created limitations and exclusions as to what is the proper realm of philosophy and what can be understood as purely scientific. The progression of systems of universalization result in Wittgenstein’s seventh proposition of the

Tractatus Logico-Philosophicus: “Of that which we cannot speak we must remain silent.” I must raise the question as to why it took so long for systems of logic to state that those objects, concepts, and memes that cannot fit into the propositions of formal logic must not be approached by the systems of formal logic. Most Wittgenstein scholars re-interpret the phrase to mean that “which cannot be stated, must be shown.” I cannot help but feel that what is really at stake in this proposition is a field of expertise. It should be stated as “Of that which we are not suited to determine, we must not.”

Wittgenstein is defining the limitations of scientific inquiry at the borders of meaning and the visual. In answer to the Cartesian demand for clarity, for universalize method, and for a precise means of expression, Wittgenstein states that the scientific community has no means, method, or legitimacy in visual discourse. This statement comes on the heels of centuries of continual development of systems of universalization that began with Descartes’ call for (if not design and implementation of) a *mathesis universalis*. Progressing next from Leibniz’s successive efforts to reduce all phenomenon to a catalog of symbols, then to Frege and Husserl’s schism on the linguistic implications of logic, and ending with the Vienna Circle’s (primarily Wittgenstein’s) rejection of metaphysics and morality as valid scientific programs, one can watch the continual folding and reshaping of the “universal blanket”—each philosopher works to stretch the fabric of his own methodologies far enough to cover all the modes of human inquiry and expression. Each eventually falls short of true universality. The troublesome topics of metaphysics and morality are most often the sticking points in these discussions, with the many modes of logic and epistemology falling short of viability in these arenas. In other instances, such as the Vienna Circle, the modes of epistemology deny any connection to morality at all.

I will argue that *mathesis universalis* has been continually approached from dynamics of “knowledge collection” without consideration to the framework of “knowledge making.” In this section, I work through the developments of universal logic starting with Descartes’ *mathesis universalis* and concluding with the Vienna Circle. After Kant, it became obvious that a universalized means of expressing truths was inadequate, as it conveyed nothing of the processes by which one arrives at truth beyond what can be mathematically expressed. In these next sections I explore the means by which philosophers working in the Cartesian tradition of creating a sound system for the discoveries of truths developed related interests in logic, languages, and processes by which truths beyond abstraction are maintained and validated. In the following discussions I will point out how each new step in the systems of formal logic, developed by the finest logicians in the Western world, fails to incorporate theoretical grounds for the molding of and laying down of knowledge units. The continual focus upon “what must come before” the acceptance of knowledge (the *primum*) has led to a kind of stalemate of philosophical discourse. By positioning *poiesis* as a necessary opposite to *mathesis*, we may open a window enabling perception of the value of forms and modes of knowledge that before were obscured by the demands for (a certain kind of) rigorous logic.

Beginning with Descartes

Returning to Descartes, we note that Rule IV of *Rules for the Direction of the Mind* states, “There is need of a method for investigating the truth about things (Anscombe and Geach, 157).” Descartes was referring to *mathesis universalis*, the idea that what can be taught and learned as concrete propositional knowledge requires a universalization of means as well of expression. This idea can be understood as threefold for the sake of this dissertation: it refers to

the language of scientific expression, the methodology of scientific inquiry, as well as the concretized fundamental knowledge itself. A detailed examination of the history of the term reveals disputes as to whether the term exclusively means “mathematical expression” in a literal sense, or if it refers to a more general system of scientific inquiry. Historically, most have preferred the latter definition. There are roots in the Jesuit tradition as well as the early Renaissance that pre-date Descartes’ conception of this term,⁴⁶ but for the sake of this dissertation, Descartes is the natural starting point for exploration of this concept.

Mathesis universalis is at once a method for seeking knowledge and a mode of expressing knowledge. The method involves a denial of what is unclear and a precise moving through of the following steps.

- 1.) Accept as true only what is indubitable: This implies a disregard to sensory perceptions, a radical wariness of the physical world as an epistemological source, and an acceptance that one is not necessarily being deceived by the senses or the objective world, but that one’s senses and intuitions on representations are not how foundational knowledge is gained. Foundational knowledge is key for Descartes as he believed that all subsequent knowledge can be surmised from sound rational premises⁴⁷.
- 2.) Divide every question into manageable parts.
- 3.) Begin with the simplest issues and ascend to the more complex.
- 4.) Review frequently enough to retain the whole argument at once.

The Cartesian process works much like a sieve. There is a scooping up of what is there, and then a specific and orderly process of eliminating that which does not fit into the holes of the sieve. What does not fit are the sensorial and the assumptive—qualitative data, as a rule, with

specific and organic forms that will not pass through the square holes of Cartesian doubt. The justification for this subtractive process is that it provides proof to oneself (to *res cogitans*) that things are as they are. The dogmatism of the scholastic⁴⁸ tradition does not provide a reliable basis for demystifying notions that have no sound logic for a thinking self. Rather than being revolutionary, Descartes intended his method to be reformatory. Philosophers after Descartes' lifetime found that *mathesis universalis*, while methodologically sound, required a better mode of expression than the algebraic or geometric proofs as those phrases alone fail to encompass the scope of observable life. *Mathesis universalis* provides procedures and means for what can be understood as proper scientific inquiry and proper scientific discourse. What it does not do is determine anything to be dogmatic or fixed in nature. The clarity and categorical nature of math does not require one to know the thing-in-itself, only purely abstract representations. In terms of a model of procedure, *mathesis universalis* is to be used only in terms of that which is clear, rather than that which is assumed a priori. It works to achieve the highest level of detached clarity towards why and how we can understand things, specifically laws (objective and separate from ourselves), to be true.

In contemporary philosophy it is largely agreed that Descartes' conception of *mathesis universalis*, combined with the radical rationalism of the Cogito, fails to adequately support those "softer" sciences that require the admission of singular circumstances (such as language, gender, age, class, language, etc.⁴⁹) and marginalizes those conceptions of quality that would be encompassed by aesthetics (see previous chapter on Descartes for a more in depth discussion of this marginalization). This occurs because of the lack of attention to the practical aspects of scientific inquiry. While the utmost effort is given to removing all bias and possible misunderstandings within the communication and data of science, *mathesis universalis* as

Descartes composed it, lacks any discussion of the practical aspects of proper scientific research and communication. What are the proper settings for research? Who can properly conduct research? What are the proper contexts (beyond clarity) that are required for research? None of these questions are addressed in the Cartesian *mathesis universalis*. The extreme rationalism of Descartes assumes that there is no knowledge beyond the rational representations of experience as it can be universalized for communication to the broader scientific community. It is a “making-same-through-elimination”. The authority Descartes exercises to establish this universalization is that of one “free from all bias.”

As discussed above, this methodology marginalizes the arts, for they are not features of the “natural world”. It could be said that perhaps, given enough time to establish the fundamental fields of knowledge, Descartes would have eventually turned his sights on the arts. However, two things prevent this interpretation. First, Descartes’ system of mathematicization has no means of including aesthetic qualities (or qualities of any variety). Second, Descartes shows little regard for the arts in any of his works, personal or professional. This second point is discussed in depth in Chapter 3, which explores discussion of aesthetics in Descartes’ oeuvre. When I state that *mathesis universalis* has no means of including aesthetics, I refer to the two major roadblocks that prevent it: 1.) if knowledge is to be gathered not made, as it is understood to be in the Cartesian paradigm, then artworks (which are by all intents manmade) cannot be considered as being of the natural world, and 2.) It would indeed be a self-defeating enterprise to attempt to discuss aesthetics (the philosophical discourse of quality) in terms of reduced symbols or generic axioms. This is not to say it could not be done. Of course one could conduct discussions of the arts or of beauty in the language of numbers and functional symbols. But the subjective nature of meaning is not and could not be accounted for. The symbols would not be

truly universal. What is lacking in both of these modalities is an option to create truth or impart meaning. The rational mind is (or ought to be) according to the Cartesian model purely passive in its collection of knowledge. The knowledge is *primum* (there first) and the mind might only respond to it. Bio-evolution models of knowledge more prevalent today have largely debunked this “stimuli and response” mode of epistemology.

Since Descartes’ lifetime, other philosophers have responded to the call for a system of epistemology that works towards a kind of total knowledge of our world. Each in turn added some means or considerations for knowledge so that they might expand the “universality” of this most important pillar of the Cartesian paradigm.

Leibniz and Universal Calculus

As with Descartes, Leibniz makes the assumption that knowledge is gathered, not made. In a further development of the gathering paradigm, Leibniz grants significance to the atomistic nature of knowledge units—meaning is derived from the arrangement of certain fundamental or “atomic” knowledge units. This provides a small gap wherein *context* and *reference* can in some cases be revealed, however the use of reductive symbols limits the depth of meaning that can be conveyed. This limitation raises the question of what harm is done by using shorthand? For all intents and purposes, having a universalized means of expression comes across as a noble goal. But what has developed is a system of shorthand notations concerning generics and reduced symbols that truly can only be applied in certain fields. This question could in itself be the topic of an entire dissertation, but it does have relevance to the discussion of this chapter. To put the question another way, what is it that fully contextualized representation provides that shorthand cannot? Or even the reverse: what is it that shorthand provides that fully contextualized

representation does not? The first answer is of course brevity. *Characteristica universalis*, developed by Leibniz in *De Arte Combinatoria* (1666) and the subsequent systems like it, work when the assumption is made that depth of meaning is not always necessary, that quickness of conveyance is a greater priority. This assumption grants authority to the system at hand in determining what forms of meaning are necessary. Those modes of meaning (visual affect, tone, specificity, time, etc.) that cannot be conveyed in the shorthand are thus marginalized. In short originality, specificity, and reference are not immediately granted to the reader. Those things must be pursued by secondary means if desired. In the subsections that follow we will see how the next incarnations of universalized expression attempt to negotiate the need for reference and specificity. The exclusion of qualitative and/or subjective concepts is not a necessary feature of universal language concepts, however. But it wasn't until 1879 that such inclusions were even considered.

Gottlob Frege

The advent of Analytic philosophy of course has bearing on this discussion. In the interest of brevity I will keep the philosophers mentioned here germane to the concept of *mathesis universalis* and modes of universal expression. Historically speaking the schism between Continental and Analytic philosophy is not easily pinpointed in any singular event or publication, but there is a distinct period of the early twentieth century involving a limited circle of philosophers on either side of the debate. Husserl, Heidegger, Claude Levi-Strauss, and Jacques Derrida are among the most well-known Continental philosophers focusing their efforts on topics such as structuralism, existentialism, and critical theory. In the grand scheme of aesthetic discourse, Continental philosophy tends to view the arts as agents of change. When the

arts provide knowledge it is of the structures of power at play, the consequences of social norms, or the nuanced facets of life that are marginalized due to systems of universalization. The most well-known Analytic philosophers are Bertrand Russell, Gottlob Frege, Ludwig Wittgenstein, and Rudolf Carnap. The analytic tradition can be best understood as a function of “sorting”. These scholars work to sift through, organize, and isolate fundamental principles—some in search of absolute laws, others in search for common threads. Lists and bullet points are de rigor. In terms of aesthetics, the analytic philosophers maintain a rather taxonomical view of the arts. The common threads of form and content are used to create different “isms” of art when paired with specific historical events or periods. But beyond that, the analytic camp finds little objective knowledge to be gained, nor agency to be had from the arts. In fact, there is a distinct silence on the subject of the arts beyond their historical significance.

Gottlob Frege plants the seeds of Analytic philosophy, a second tradition of universalization beyond that of Descartes and Leibniz. James Luchte elucidates the continental/analytic divide in his treatment of the topic in his *Martin Heidegger and Rudolf Carnap: Radical Phenomenology, Logical Positivism and the Roots of the Continental/Analytic Divide*. Frege, Carnap, and others “set forth an epistemological interpretation of Kant which set out from the ‘fact of science’ as the primary datum, and saw the task of philosophy to trace the foundations of this ‘fact’”. In this way, philosophy becomes a mere adjunct to the natural sciences. Moreover, this school had a more ambitious political agenda, contending that the natural sciences, as a ‘universal cultural knowledge’, intimated a striving for a global cultural and political ideal” (Luchte). By contrast, those working from the perspective of Continental philosophy understood Kant’s work to be a gateway for “re-integrating the concerns of science into the lifeworld of human existence. In this way, the political and cultural implications of this

perspective were that of a respect for the plurality of individuated communities in terms of their own historical specificities.” While the political concerns for the analytic/continental divide are not necessarily relevant to the discussion at hand, Luchte’s point illuminates the nature of each party’s locus of concern.

Frege determined that logic and language were essentially entwined with reality, placing linguistic analysis on the philosophical map for the first time.⁵⁰ Although he intended the work to be about quantifiers and qualifiers, his work on language begat an entirely new frame of reference to consider in terms of reality (prior to this metaphysics was bound to physics or religion). “Frege was the first person in history of Western thought who produced a sustained and rigorous analysis of the way that meaning works in language” (Priest, 30:10)

Frege develops the *Begriffsschrift* (translated roughly as “Concept-Script”) in a book with the same title published in 1879. The idiosyncratic language is difficult to master, but once understood is a facile notation system that offers complex expressions in few variables. *Begriffsschrift* is still in use today, having been built upon by Frege’s successors, in what is now referred to as second-order logic. A few simple examples of this system of notation, taken from E.N. Zalta’s exposition simply titled, *Frege*, are as follows:

$\forall x Rxa$ Every x is such that x stands in the relation R to a .

$\forall x \forall y (Px \rightarrow Qy)$ For all x , for all y , if Px then Qy

$\forall F Fa$ Every F is such that a falls under F

$\forall F (Fx \rightarrow Fy)$ For all F , if Fx then Fy

After Frege developed this system of notation that included sets, quantifiers, and qualifiers as discussed above (see *Begriffsschrift* for more detail), questions about “sense” began to arise in the philosophical community. This does not refer to subjective meaning, as Frege

believed the image in one's head has nothing to do whatsoever with the meaning of that word. It means the sense in which one is discussing the object. In a later paper, *On Sense and Reference* (1892) Frege determined the need for notations of what sense a statement was being made. To use Priest's example, there are two senses in which one can use the object "the Morning Star."

The Morning Star = The Morning Star

The Morning Star= The Evening Star

Both of these statements are true, which means that there must be clarity as to the sense of an objects reference so that contradiction can be avoided. Dissecting the functions of language in reality even further, Frege made an enormous leap in his next paper *On Concept and Object* (1892). When dissecting phrases into objects and predicates, Frege determined that concepts (concepts can be verb phrases, conditions, or adjectives) are possessed of imperfect meaning—they are understood but with objective "gaps" of sorts. For example the phrase "is excited" has no meaning because it isn't paired with an object to fill the objective gap. Frege notes that another concept does not fill this gap as the phrases "is excited, is excited" or "is excited, is red" are meaningless until they are paired with an object. The phrases "Jane is excited" and "The Bird is excited and is red" show how the objective gap is filled. To put this system simply:

	Reference	Sense
Noun Phrases	Object	Mode of Presentation of an Object
Verb Phrases	Concept	Mode of Presentation of a Concept

While this system may seem incredibly obvious, it in fact represents a prototypical paradigm for metaphysical reality. He has stated that there are at least two different kinds of things in reality and they both entail a referent and a sense. Frege's system of semantics is no longer in use aside from one aspect—putting the theory of meaning center stage in terms of

reality. Edmund Husserl would later pursue similar avenues of thought but took his own conception to originally include subjective mental images (psychologism). A critique from Frege would cause Husserl to dedicate the remainder of his career to developing a non-psychologistic analysis of the objective structure of thought, but dependent upon the nature of logic and thought rather than linguistic meaning. This historical “fork in the road” marks what can be viewed as a first division point between Continental and Analytic philosophy.

Frege’s overall justification for a reform to the standardized notation was a completion of the Aristotelian logical syntax that could not include generalized statements. He begins the preface of *Begriffsschrift* by stating precisely this, “If the task of philosophy is to break the domination of words over the human mind ..., then my concept notation, being developed for these purposes, can be a useful instrument for philosophers ... I believe the cause of logic has been advanced already by the invention of this concept notation” (*Begriffsschrift* 6). In essence, Frege worked to expand Leibniz’ system to have reductive symbols for modes of logic and inferences, not just numbers and objects—thus allowing for the laying down of generalized statements that could not otherwise have been made. This increase in available complexity is the basis for modern predicate calculus, which in turn, is the basis for generations of programming language. What is different in Frege’s approach is the emphasis on actions and relationships between objects, rather than an emphasis on the fixed-ness of the objects at hand. The static symbols of objects that would have been utilized by Descartes and Leibniz underscore their objective worldviews. These two philosophers’ approaches began with what could be understood as clear and distinct, thus placing an “object first” characteristic on their respective philosophies. Frege viewed the interaction between human beings and the objective world as more central to generating a system of universality. For him, logic and relationships were the universal glue

holding the human world together, rather than the universally observable objects be found in it. Predicate calculus worked to universalize the actions taken, the relationships upheld, or the meaning instilled into those objects that can be found in a particular context.

Ludwig Wittgenstein

Ludwig Wittgenstein continues on the path Frege lays out by developing a universal system of propositions that would encompass all logic- but he does so with a sharp critique of philosophy. *Tractatus Philosophicus (Tractatus)* hold seven basic propositions from which all situations can be examined. Rather than employing a reductive way of approaching universalizations, Wittgenstein worked to universalize communication about a specific closed context he referred to as “the picture.” A picture, rather than being a literal image, is the case of facts at hand. Facts, as he sees them, are not objects but combinations of objects that are either actual or possible.

Tractatus is a methodology for generating propositions about cognition and the natural world that adheres to a strict sense of formal logic. Beyond *Tractatus*, however, Wittgenstein does not uphold philosophy as a legitimate field in and of itself, but instead treats it as a field of therapeutics to be applied to any other mode of inquiry. It is the way one “shows the fly the way out of the fly bottle” (PI 309 p 103) For Wittgenstein, the methodology is logic aimed at the propositional knowledge of the natural world. This includes no philosophical discourse properly speaking. “The correct method in philosophy would really be the following: to say nothing except what can be said, i.e. propositions of natural science ... and then whenever someone else wanted to say something metaphysical, to demonstrate to him that he had failed to give a meaning to certain signs in his propositions” (TLP 6.53, p187) The second, more far- reaching,

“discovery” in the *Investigations* “is the one that enables me to break off philosophizing when I want to” (PI 133, p51). On paper Wittgenstein’s methodology is strict form of propositional logic. Taken in context, his work can be seen as a radical dismissal of the self-indulgent nature of philosophy. By these standards, in depth investigations into metaphysics, the nature of cognition, and the meanings of large underscoring concepts such as being, time, etc. are not acknowledged as necessary to the epistemological “game.”

Wittgenstein’s most influential works seem to push for a stricter adherence to logic when generating knowledge of the natural world—this fits with the general arc of the Vienna Circle’s rejection of moralism and existentialism—Wittgenstein’s later work, specifically *On Certainty*, reveals a deep conversation with the Cartesian methodology of doubt that sheds light on the overall game of Wittgenstein’s strict logical method. It is clear from this posthumously published collection of aphorisms that the general aim of his work was to simply “get on with it” without allowing the mind to become mired in seemingly-unanswerable questions of metaphysics and morality.

In Wittgenstein we find a truncation of the Cartesian tree of knowledge—he effectively skips over the roots and ignores the sky above. Descartes posited metaphysics as the root of epistemology, and posited that morality would naturally follow after the establishment of specialized scientific knowledge (like the sky above the branches). Wittgenstein finds no purpose in trying to apply the language games of science (logic and mathematics) to those areas beyond the bounds of said language games. He is in effect closing the epistemological circle by means of subjective dismissal. He enables the subject to reject those questions that cannot be readily answered. In a sense this is very much like Descartes in that both men only wish to proceed in clear and distinct directions. Unlike Descartes, however, for Wittgenstein that direction need not

be supported by metaphysics or morality, as those fields are not possessed of the rules that allow for the pursuit of logic and mathematics. To put this in terms of universalization, Wittgenstein is the first to declare *ingressum* (refusal to allow) to those questions that philosophy (philosophy in the contemporary, specialized sense that it is today) pursues in terms of his system of universal expression. It must be understood that Wittgenstein effectively answers the Cartesian call to generate universal language, universal logic, and universal methodology with a simple *non possum* (not possible).

Wittgenstein rejects and thus effectively ends the Cartesian ambition to close the “circle.” He states that you cannot encompass the whole the natural world under one universalized system. He determines philosophy to be an activity of personal therapy rather than any type of doctrine, and most interestingly, determines the activity to be nonsensical as the picture at hand in itself is not the concern. He determines philosophy to be the act of clarifying logic and elucidating on problems of language and therefore it is not related to “sense,” and is indeed, “nonsense.”

The *Tractatus*’ dependence upon the idea of pictures and what “cannot be said, only seen” has made it one of the few works of the analytic tradition that appears to make space for the visual arts, though that space is of questionable value. As stated above, pictures for Wittgenstein are not generally of the visual sense of that term, and are more lists of facts at hand. Philosophy and related revelatory means of exploration (like the arts) cannot have the same rules of formalized logic introduced (nor can the formalized rules of logic be introduced to the arts), as their inherent “game” is not the same. Towards the end of Wittgenstein’s life he became more interested in aesthetics, and began to posit what the rules of aesthetics might be. First and foremost Wittgenstein understood the language game of aesthetics as changing over time.

Secondly, and most importantly for our discussion, he understood aesthetics—by and large he means the acts of sensing by this term—as an influential force in the grand inquiry into the human world. What exactly aesthetics means to Wittgenstein is difficult to define in words, as he feels the concept becomes bogged down by the limitations of language, and as the *Tractatus* firmly states, should be kept at a far remove from objective inquiry.

CHAPTER 5

Wright of Derby as a Moment in the Development of Universalization

In this chapter I will argue that the Science Paintings of English painter Joseph Wright of Derby hold a deep philosophical discourse with the Cartesian paradigm by questioning the paradigm's consistent privileging of universalization and centralization of the hard sciences through its placing of scientific research within a social sphere.

I will begin with a brief biographical sketch of Wright himself, and follow with small sections on the arts during the industrial revolution, the contemporary aesthetic comportment, and art theory of Wright's time. With these historical contexts in place, I then proceed to a discussion of Wright's social milieu, aesthetic mindset, and economic status—all of which bear upon treating him as a thinker, as well as an artist through consideration of a specific series of six paintings (I will group them by pairs) done by Wright between 1768 and 1790. In this chapter I will demonstrate the inclusive nature of Wright's philosophical discourse, and foreground the moral questions posed by these works.

Born the third son of attorney John Wright in Irongate, Derby-in-the-Midlands, Wright was free to pursue a career beyond the family business of law. His eldest brother John followed in their father's choice of profession, and his brother, Richard, chose the noble trade of medicine. As a young man, Joseph displayed a knack for capturing likeness in drawings of friends and neighbors, so his father supported the choice of an arts career.⁵¹ He arranged for Wright to have an apprenticeship with portraitist Thomas Hudson⁵² (1701-1779) in London from 1751-53. After returning home to Derby, with brief a professional excursion to Liverpool (1768-1771), Wright became a respected portraitist to many of the rising Industrial moguls of the area, all the while

painting many works with peculiar and striking subjects. These works were nearly always painted on speculation- a strong indication that the subjects chosen are ostensibly of personal interest. The works universally emphasize illumination by artificial means, an unusual topos for a provincial English painter.

The distinct lack of consistency of the nicknames given to Wright across the relatively few texts dedicated to his works speak more of his lack of recognition than to his comparative lack of sales, or lack of acceptance by higher social orders. “The Painter of Light” by Benedict Nicholson, “The Philosophers’ Painter” by Eric Robinson, and more descriptively “A Painter and A Gentleman” by Andrew Graciano all warmly invite the reader to look upon Wright with a pitiful shake of the head and a regretful shrug. But it is unclear as to what it is these authors feel Wright should be recognized for as he is consistently viewed through a lens of assumed mediocrity. Wright’s work is portrayed as what I can only describe by the following critical quips: “good, but not great,” “well executed, but not original technique,” and “a big fish in a small pond.” Most of the texts speak of his provincial nature, his very British folksiness, and the prevalent influence of the Industrial Revolution on his work. “That the fire of genius is absent from the finished work of Wright we will not deny” (Kaines-Smith and Bemrose 33), while conveying the very tautological point that Wright is not famous because he is not well known.⁵³ Portrayed as a person peripheral to the Royal Society and other high status milieu, he is treated as one whose work is considered archetypal to the Industrial Revolution, a classic example of a provincial (read less successful) artist who painted more genre-esque works, and one who failed to achieve celebrity status.

Certainly the historical records indicate that he did not reach the levels of fame that he might have sought after, and it is well documented in his personal correspondence that he was

often unsuccessful in securing higher profile commissions. But average or middling does not necessarily point to mediocrity. In Wright's case, it is more indicative of an engaged but non-radical stance on many aspects. Moderation was his nature and his asset. As a landowner, Wright was wealthy by comparison to his neighbors in Derby, but not so compared to those in London society. As an artist his skill was remarkable for his provincial background, but not so compared to artists trained on the Continent. Bemrose describes him as "a painter by instinct not by environment," indicating that a career in the arts was an unusual move for someone of his locality and lineage.⁵⁴ In all the texts dedicated to Wright, I have yet to see real discussion given to Wright's own philosophical contributions or any acknowledgement of him as a thinker.

With this case study of Wright's Science Paintings, I intend to bring to light the discourse an "average" artist maintained with the hard sciences during such a pivotal time in Western history. I will use the moment of Wright's works (1768-1791) to provide a historical example of how the privileging of universal expression, a concept directly tied to the Cartesian paradigm, marginalized the concepts of content and original expression. The Science Paintings directly address the sciences, and do so with enthusiasm and awe. This is not to say however that Wright offers no criticism or wariness of science and industry. The lone exception to the paucity of aesthetic discourse given to Wright is a chapter Andrew Graciano's *Joseph Wright, Esq: Painter and Gentleman*. Chapter 4 of this text connects Wright to certain philosophical circles, but not as a contributor, only as a social bystander or soliciting businessman. In the below section titled "Wright as Self-Funded Artist" I offer an in-depth critique of Graciano's views on Wright as an artist who did not need to paint for money. As prologue to this discussion, I offer a look at Wright's particular moment in history.

Wright as Self-Funded Painter

The title to Graciano's 2012 text is titled *Joseph Wright, Esq.: Painter and Gentleman*, abandoning the typical reference to the artist as Wright of Derby. The text follows suit by delving deeply into the economic atmosphere of Wright's personal finances, as well as those of his circle of friends and clientele. One the key premises he argues for is that Wright chose to stay in Derby, rather than staying due to any professional failure. "Wright was not 'stuck' in Derbyshire unable to make it as an artist in London. Rather... that he was a man of independent means who did not need to paint for money" (53). This matters to our broader discussion of Wright's speculative works. If one understands that Wright was not aiming to sell these works as a means of financial support the tone of their expression hits different notes. Works painted to suit a patron or aimed at a particular buyer carry a tone, hopeful or otherwise, of beseeching or even supplication. The Science paintings, though likely painted in hopes of someday selling them, cannot be understood as typically speculative. It is entirely possible Wright was painting these works as advertisements for himself, hoping to impress viewers in order to secure portrait commissions. But even so, the circle that Wright moved in would by and large be more impressed with an artist who could engage not just their visual interest, but their own philosophical interests as well.

Let us assume that Graciano is correct that Wright did "choose to stay" in Derby. This does not mean that the secondary interests of philosophy, science, and industry were purely pursued by Wright as an artist/businessman. The scholarly and philosophical nature of the pictorial content however would not necessarily have been palatable to the nouveau riche that made up the bulk of Wright's patrons. To illustrate my point, Graciano discusses the importance of the newly rich industrialists in such a way that does not account for Wright's personal

interests of philosophy or Science, but instead only discusses how an interest in geology or map-making would have been relevant for his pictorial descriptions of objects painted in some of the various portraits commissioned by industrialists.

In a letter from Wright to his brother (dated Nov 11, 1774), Wright describes missing his geologist friend, John Whitehurst, while witnessing a volcanic eruption in Italy: “When you see Whitehurst, tell him I wished for his company when on Mount Vesuvius, his thoughts would have center’d in the bowels of the mountain, mine skimmed the surface only.”⁵⁵ Graciano argues that this statement is testament to Wright’s general, not in-depth, interest into geology (and thus all of the hard sciences) by inferring that the “surface only” portion of this quote has more meaning than Wright’s own visual appreciation for what can only be a surreal event to witness. In fact the title of Graciano’s chapter is “Surface and Depth,” in which he describes the industrial motivations for the Derby locals to be keen on geology (knowing which types of clay produce the best pottery for the Wedgwood factories, for example). As these people would be Wright’s patron’s Graciano views any interest Wright would have had in geology as pandering to the interests of the wealthy. He uses the above quote from Wright’s letter as proof. But Graciano’s position is a disservice to Wright as a thinker and potential contributor to greater philosophical discussions.

Adding to my doubts about this position, Graciano notes only a portrait by Wright that contains a mineral specimen (*Portrait of Charles Hurt*), and the few landscapes that contain geological formations (this is tautological: they are landscapes, of course they have geological formations) as evidence of Wright’s superficial interest in geology. I find the argument that a visual artist being mostly interested in the surface appearances of phenomenon as indication of his lack of in-depth interest in the visual subject matter to be fallacious and tautological. As a

visual artist, of course he was interested in the appearance of objects. The surface appearance of phenomenon (particularly light in Wright's case) would be his area of expertise. But to discredit a person's interest in a subject matter as novice or secondary to their profession, and that a "hobby-like" quality to one's interest somehow makes one less able to contribute to discourse on the subject matter at hand is certainly an academic fantasy. I say academic because only academics believe in the proprietary voice of expertise. This argument of a novice interest in the sciences is flawed, but recalls a key aspect of the larger question at hand: how does Wright's work hold discourse with the Cartesian paradigm? The deeper meaning to be gleaned is that Wright shuns the need for expertise or credentials as he contributes to the world around him. That is to say, he casts off the pre-requisite of expertise and "properness" of voice that is inherent to the Cartesian paradigm.

Recalling that Descartes tells us what is the proper subject for inquiry, that which is clear and distinct; that he delineates the proper order of inquiry (the metaphysical to the physical, and so on); that his paradigm requires us to understand knowledge as that which is discovered; and that our worldview must require the mind to be separate from the body inhabiting a mechanistic universe, it is simple to understand that Descartes was possessed of many notions of "propriety." As discussed in depth in the previous chapter, he felt a strong need for a proper means of methodology and expression. For Descartes, morality is the natural result of the full possession of knowledge of the natural world. But because his work contained no reference to the arts, aesthetics, or moral philosophies, these fields are not deemed the proper arenas for the pursuit of knowledge, nor the expression or conveyance of knowledge. Wright will challenge this Cartesian paradigm on many levels, all the while engaging the aesthetic discourse of his time by a strategically inclusive stance on the sublime, the picturesque, and the beautiful.

Wright's Sociocultural Milieu

There is historical evidence of Wright's participation in philosophical discourse as he was part of a circle of people in Derby known as the Lunar Society. So named because they convened monthly on the Monday nearest the full moon (arguably for the use of the full lighting a large moon would offer), the group was comprised of industrialists, scholars, clergy, and intellectuals. Largely informal, the group was maintained for over fifty years and included many prominent figures of the Midlands. This short list of associated members (there are over 200 people historically involved in the Society) reveals the true diversity of interest the group provided: Matthew Boulton (industrialist), Erasmus Darwin (physician and poet), Thomas Day (author), Richard Lovell Edgeworth (politician and inventor), Samuel Galton (arms manufacturer), Joseph Priestley (theologian), William Small (professor), Jonathan Stokes (botanist), James Watt (engineer and chemist), Josiah Wedgwood (industrial ceramicist), and John Whitehurst (clockmaker). Wright was never a consistent member of the group, but this circle of people included so many of his patrons and prospective commissioners that occasional meeting attendance was not just of importance to his scholarly interests, but as a networking event.

Wright's patrons' enthusiasm pushed Wright to read the latest in all manner of scientific and philosophical writings. He spoke of reading *Emile* by Rousseau, attended lectures given by Scottish astronomer James Ferguson, and discussed the works of Isaac Newton with his close friend John Whitehurst. Peter Perez Burdett, cartographer and mathematician, is described as Wright's closest friend in several texts (Egerton, Elliot, et al), and indeed he is the only exact likeness that can be identified, appearing in two of the six science paintings. Burdett is the center figure represented in *Three Persons viewing the Gladiator* and is the man taking notes in *The*

Orrery. Wright accompanied Burdett on survey outings of the Derby area, and was instrumental in introducing Burdett to Josiah Wedgwood—a meeting that proved fortuitous for the latter two in terms of the newly developed aquatint technology that Burdett presented to Wedgwood for purposes of reproducing images on pottery. This technique is now a hallmark of Wedgwood Pottery.

When reading the litany of influential people in Wright's immediate social reach it might appear that the painter was a gregarious socialite. Nothing is further from the truth. Wright is noted by several biographers to be of a "home-ish" nature and preferred to keep his social life to a limited circle. What allows us to consider this wide range of industrial and scientific leaders as influential to Wright was the developing trend of "societies" that was in full stride during Wright's lifetime. The above-mentioned Lunar Society was one of at least a dozen scientifically slanted social groups that met in Derby and the surrounding Midlands in the eighteenth and nineteenth centuries. Special interest groups ranging from the scientific to the sinful (a number of drinking, gambling, and sex societies are also of note during this time frame) showed the rising middle class answer to the Royal Society and other courtly circles in London. The social consumption of science is the topic of Paul Elliot's book *The Derby Philosopher's: Science and Culture in British Urban Society 1700-1850*. A key claim Elliot makes in this text is that the growth of these societies due to the advent of Newtonian natural philosophy. This distinct way of describing Newton's influence on the Industrial revolution is key to our discussion of Wright's works as they relate to the Cartesian paradigm.

Newtonian natural philosophy⁵⁶ offers critique to Cartesian natural philosophy only by means of expansion. Newton felt that the radical rationalism of Descartes relied too heavily upon theoretical foundations. Andrew Janiak, in his essay on Newtonian philosophy, states that

“Newton respected Descartes' rejection of Aristotelian ideas, but argued that Cartesians did not employ enough of the mathematical techniques of Galileo, or of the experimental methods of Boyle, in trying to understand nature” (Janiak, 1.3) *Newton's Philosophiae Naturalis Principia Mathematica* can be understood as a direct response to Descartes' *Principia Philosophiae*. The response therein is hardly a rejection of Cartesian methodology⁵⁷, though historians often posit it in such a light. The criticism is not that what Descartes' has done is unsound but incomplete in terms of the practice of study. Newton finds the dearth of methodological standards and guidance on the topics of mathematical data and experimental science to be problematic. Newton encouraged rigorous criteria for experimentation and demanded that mathematical modeling be an essential part of the pursuit of knowledge.

The push for experimentation and the importance for mathematics made scientific research more accessible to the growing classes of scholars. Those classes of scholars eventually disseminated their ideas to the rising, newly-educated, middle classes. Holding educational, if not necessarily research driven, “experiments” for public witness has direct ties to the ease of legitimacy that Newtonian natural philosophy extended to all participants—that is, anyone can conduct experimentation so long as the three tenets of hypothesis/conclusion rationale, mathematical modeling, and detailed consideration to experimental factors were upheld. On these grounds it is not illegitimate to conclude that the discourse at hand in Wright's paintings resonates with Newtonian natural philosophy. It is however an incomplete conclusion. As Newton never contributed to philosophy any such works devoted into the topics of world-view, the character of the mind, or metaphysical philosophy it would be an unsubstantiated credit to say that his philosophical discourse was at the heart of Wright's visual discourse. Wright's works touch on the harmonious order of the universe, the nature of the practical work of science, the

conceptions of those things proper to science, and the pleasure to be found from the scientific pursuit of knowledge. None of those topics are central to Newtonian discourse, therefore for the intents and purposes of this discussion, we shall understand Newtonian natural philosophy as the contemporary incarnation of the Cartesian paradigm—an incarnation that expands upon, but does not alter, the character of Descartes’ original scientific method.

The Zeitgeist of Mid- to Late-Eighteenth Century England

It is a large undertaking to accurately capture the full picture of the Industrial Revolution, even if one tries to limit the view to its origins in Great Britain. Francis D. Klingender narrows the aperture even more with his historical treatment of the Arts during the mid-eighteenth century. Critiqued by some (See Robinson and Barea Reviews) as overly linear and for making “forced” explanations, Klingender’s text on the Industrial Revolution is certainly broad-reaching with few points of in-depth scholarship or keen acumen. However it is one of the few dedicated texts on the subject of the Arts during this pivotal time in history, and its breadth (shallow as it may be) provides an adequate backdrop to our discussion of Joseph Wright’s works. The overall thesis of *Art and the Industrial Revolution* holds a reverence for the self-driven gumption those artisans and tradespeople working in eighteenth-century England maintained. “To become a great maritime and trading power, England had to develop her own industrial resources. [...] Enriched by the dissolution of the monasteries and by colonial profits, aided by the grant of monopolies, a new class of adventurer emerged to direct the industrial expansion of the sixteenth and early seventeenth centuries” (3). Use of the term “adventurer” is quite telling. Klingender works through the various arts describing each artisan as having self-possessed tenacity, and warm embraces for the developing industrial mind-set. In the works discussed, there is no

nostalgia for any era gone-by, and a distinct patriotic sense of accomplishment and wonder at England's own resources and resourcefulness.

There are few criticisms of the consequences of the industrial revolution (no comments about environmental devastation or remarks about the greed of industry royals) and a distinct sense of praise for the cultural re-valuing of human labor. Whereas a more contemporary text on this topic might paint the time period with colors of greed, Klingender focuses on the industrious nature of mankind rather than industry itself—calling the big names of the era “adventurers” rather than “tycoons” or even the more neutral “inventors” is noteworthy. Perhaps it is because the real topic of the text is the art and artists working during this time that he chooses to eschew such common denigrations. Klingender's own Marxist tendencies are referenced more than once in the different introductions to the book, so it would stand to reason that he would carry grudges against those that exploited common labor. And yet nothing of the kind is said. He chose to embrace the awe and enthusiasm of industry that these artists portray as a noble moment when humankind awoke to the values of their toil.

Simon Schama, in his *History of Britain vol. 1*, also acknowledges this sudden rise of interest in the value not only of one's own labor, but the beauty that resided in one's own country. Wright's portrait of Sir Brooke Boothby features in Schama's opening chapter. Schama interprets Boothby's portrait as depicting a citizen whose attentions have returned to the Ancient British heritage.



Fig. 1. *Sir Brooke Boothby*, Joseph Wright of Derby, 1781, Oil paint on canvas 148cm x 208cm

<http://www.tate.org.uk/art/artworks/wright-sir-brooke-boothby-n04132>

Posed graciously nestled in the English woods, reading a book by Rousseau (no doubt *Reveries of a Solitary Walker*), Boothby is depicted as a tourist of the quaint countryside, an activity that rose in popularity during the fall of the British Empire. This concept connects with a newfound appreciation for the aesthetic pleasures of the picturesque described in detail below. The un-manicured scene of nature, not overwhelming or vastly foreign as with the sublime, but still rugged and untouched is a mode of aesthetic expression that received great attention during this time.

Klingender and Schama's somewhat optimistic viewpoints about this time frame are well suited to open our discussion about Joseph Wright of Derby. Wright certainly upheld a kind of

visual reverence and optimism for the reaches of science and industry. Weary of the light of the sun, Wright paints man-made light as compelling, and truly the focus of contemporary attentions. Judy Egerton begins a chapter on Wright and The Lunar Society as follows: “Joseph Wright’s two major paintings of the 18th century scientific activity, ‘A Philosopher lecturing on the Orrery’, 1766, and ‘An Experiment on a Bird in the Air Pump’, 1768, represent a complex synthesis of art, science, and philosophy” (15) The pity is she is only referring to the content of these works. A deeper synthesis is at hand with all of the Science Paintings. The moderate negotiation Wright exhibits between Cartesian rationalism, industrial practicalities, and artistic expression is remarkable, and as yet undiscussed by scholars of this period.

The Aesthetic Discourse of the Late Eighteenth Century

The state of aesthetic discourse during Wright’s lifetime was one of inquiry and categorization. Aesthetics as a concept, as well as a philosophical branch, was in a natal state. Baumgarten’s *Aesthetica* was published in 1750, marking the first time that the word “aesthetics” had been used to refer to a sense of beauty rather than just simple “sensation.” After Baumgarten, philosophers took an interest in the compelling and pleasurable aspects of the arts. Treatments of aesthetics that serve to rationalize the experience of pleasure from the arts began to appear, though these works were generally always written by philosophers, not artists. If we are to understand Wright as a thinker—that is, as one contributing the philosophical discourse of his era—we must consider his visual record and the aesthetic sensibilities and philosophical texts prevalent during his time. Descartes, as we have discussed in the previous chapters, had stressed that maintaining proper decorum in an inquiry, as well as employing the four foundational pillars of his paradigm, was necessary to support rational philosophical discourse. Aesthetics in

Baumgarten's sense was made prominent for English-speaking readers by Edmund Burke.

Wright's near contemporary, who sought to theorize the then uncharted topic of "good taste" by rational means. Burke's concepts of the beautiful and the sublime can be directly tied to Wright's visual discourse, as well as some ideas that reflect the "new" idea of the picturesque—a concept introduced by William Gilpin in the late-eighteenth century. Wright implicitly places these new aesthetic conceptions in dialogue with the Cartesian paradigms in his paintings depicting the social reception of scientific ideas.

It might seem unlikely that the taxonomy of visual expression developed by Edmund Burke could have any significant connection to Descartes' pillar of *mathesis universalis*. In the introduction to *A Philosophical Enquiry into the Origin of our Ideas of the Sublime and the Beautiful (Enquiry)*, Burke describes the difficulty of the laying out of new knowledge about complex matters in such a way that it cannot help but recall Descartes' preference for simplicity and clarity: "We must not attempt to fly, when we can scarcely pretend to creep. In considering any complex matter, we ought to examine every distinct ingredient in the composition, one by one; and reduce everything to the most simplicity; since the condition of our nature binds us to a strict law and very narrow limits" (8).

In Descartes' and Burke's separate, yet similar, calls for careful consideration⁵⁸ there is a preference for what is clear and distinct. In the above, Burke is essentially beginning a rational exploration of the two concepts that pervade the arts while having little in the way of prior similar investigations to draw from. Burke composed *Enquiry* largely wishing to inform a rising middle class of participants in civic government and higher society as to the benefits of considered and informed taste. Though knowledge per se is not what he intends the essay to convey, he is in fact generating knowledge that will inform the course of aesthetic history by

both direct and indirect means. Other philosophers, such as Immanuel Kant (though by means of critique⁵⁹), will draw upon Burke's aesthetics to generate their own treatments of the topic—giving aesthetic philosophy a decidedly rationalist pedigree. In *Enquiry*, Burke describes the need for developing good taste as such:

If we can direct the lights we derive from such exalted speculations, upon the humbler field of the imagination, whilst we investigate the springs, and trace the courses of our passions, we may not only communicate to the taste a sort of philosophical solidity, but we may reflect back on the severer sciences some of the graces and elegancies of taste, without which the greatest proficiency in those sciences will always have the appearance of something illiberal. (11)

Burke, with the above, is stating that the sciences are in some ways impoverished by the lack of attention to the pleasure gained from well-crafted, complete knowledge—in particular well-crafted knowledge about the seemingly-subjective concept of pleasure. From this quote we see that Burke has qualitative concerns about the generation of knowledge.

What is more important to glean from *Enquiry* is that Burke opened a channel between cognition and the arts by means of addressing how a work of art might affect cognition, rather than just by the visual content of the piece. While other European schools of art scholarship contemporary to Burke were developing the somewhat standardized hierarchies of genres⁶⁰, Burke's concepts of the sublime and the beautiful are not all categories of visual content. They are categories of *cognitive response to visual content*. What Burke had done is remove the content as central to the means of taxonomy, and considered the intended expression of the work as more important. As a means of organizing the possible cognitive reactions one may have to a painting, Burke uses scale and scope in relation to the individual human being as incremental. To

clarify, Burke asks the questions of a painting: is the meaning intricate? Singular and complete? Or larger than the human scope of understanding? If one understands these categories as smaller than, on the scale of, or larger than a human being—as Burke developed these concepts to be, and as Kant would later maintain them in the third critique—one can see an instinctual measuring of what is universally available to all viewers of a work of art: the scale of the expression in terms of their own human existence.

Wright in his science paintings negotiates these scales of expression in singular viewpoints. He does not choose any one scale in particular to be the main focus of the scene. In each of the six paintings, there are important references to the beautiful (the intricate scientific equipment), the sublime (the reverence for the larger universe or the harmony of nature), and the picturesque (the quaint scenarios on display). Ever the inclusive thinker, he visually comments on each of these concepts as they relate to the actual scenario. The continued inclusion of all “scales” across these paintings shows persistence in Wright’s sense of what ought to be expressed in terms of science—Inclusion of the whole of the case at hand, not just what is clear, distinct, and measurable. By doing so with the aid of generic representations, Wright has found a way to bring the focus to the mood at hand, to the figures as they interact around the work of science, and to the scene of science as a complete and inclusive visual moment.

By favoring what is being expressed (what is being said) and by declining to shoehorn that statement into a single scale of expression, Wright has found a tangible way to favor the content of an expression, even if that content does not readily fit into a clear category of subject matter. In understanding the science painting in this way, we understand Wright’s moderate stance as a means of engaging in philosophical discourse by means of inclusion. By the inclusion of all three “types” or means of visual expression, and the use of generic, non-specific tropes and

un-identified figures engaged in indiscernible activity, Wright has stated that the work of science is socially un-isolated, that there can be pleasure found in the work of science, and that the reach of science (and therefore industry and technology) has at once both dubious and glorious facets.

As discussed in a previous section of this dissertation, Descartes' conception of *mathesis universalis*, when taken into consideration as an object or "thing," is comprised of three aspects: a means of expression for fundamental knowledge, a mode of inquiry and experimentation to determine fundamental knowledge, and the body of fundamental knowledge itself. What we have seen to be missing from Descartes' paradigm of *mathesis universalis* is the means of laying down conclusions—a means of making knowledge. That means is *poiesis*, which has thus far only been considered *viz a viz* the arts. Yet the step of making knowledge for the purposes of moving the world forward is applicable to the hard sciences as well. Wright, by contributing his science paintings to the philosophical discourse surrounding science, technology, and industry, succeeds in adding visual knowledge to the sciences. If one is doubtful as to the veracity of this claim, one only need to place the phrase "discovery of phosphorus" into a search engine and on every page related to the topic, an image of Wright's *Alchemist* is to be found.

The Shift from the Harmonious Renaissance to the Sublime and the Picturesque

What is meant by the shift away from the Renaissance must be made clear if we are to fully understand Wright as a thinker engaged with the Cartesian paradigm, rather than just an artist. Klingender clarifies this shift for us, by choosing an excellent pair of paintings to show the marked shift in style that occurred in the arts during Wright's lifetime. A side by side viewing of paintings by the le Nain brothers underscores how two works exemplify the move towards picturesque realism:

At about the same time the brothers le Nain similarly resolved the conflict between classical convention and realism. ‘Venus at the Forge of Vulcan’ at Rheims, attributed to Mathieu le Nain (1607-77), is close in composition to ‘The Forge’ by his brother, Louis (1588-1648), at the Louvre. But in the latter Vulcan has been reduced to the role of onlooker, and Venus and Cupid replaced by the blacksmith’s wife and child. It seems probable that the former picture [left] is the original composition and the Louvre [right] picture a brilliant variation. (53)



Fig 2. *Venus at the Forge of Vulcan*, Mathieu le Nain, 1641, Oil on Canvas,

[https://commons.wikimedia.org/wiki/File:Venus at the Forge of Vulcan, Le Nain.jpg](https://commons.wikimedia.org/wiki/File:Venus_at_the_Forge_of_Vulcan,_Le_Nain.jpg) (left); *The Forge*, Louis le Nain. 1641, Oil on Canvas, <http://www.safran-arts.com/42day/art/art4may/art0523.html> (right)

In the absence of an in-depth analysis from Klingender (he says no more about these two paintings than the above quote), we may expand upon the aesthetic values at play in this stylistic

shift. In *Venus at the Forge*, we find clear homage to ancient Greek anatomical style and posturing (the *venus pudica* pose of the Venus figure, for example), as well as the classically idealized draped garb—clothes that are absolutely impractical to be worn at a forge. The objects present are crafted and delicate in appearance, unlike any actual tools a smith would wield. The anvil, for example, is rendered small and smooth, echoing the feel of a writing desk rather than a work surface. The conventions of Venus and Vulcan are maintained with the odd presence of a child-Cupid and an impossibly-oversized hammer. Through this we see the clear reverence for classical idealization that is typical of Renaissance paintings. The aesthetic values at play appeal to a Platonic mindset, with beauty having strict rules, proportions, and orderly appearance.

The step away from idealized forms in the second of these two works shows disenchantment from the idealizations of the ancients towards a more anthropocentric lens on the various subjects of painting. In these two works the subject of labor is most central, a theme that is recurrent through the works of the industrial revolution. By the eighteenth century, painting and sculpture had begun to capture labor by the light of hearth fires and steam furnaces—but in the former Le Nain painting those manning the forge are still concepts of visual and cultural perfection. The conceptualization of labor, before portrayed as that carried out by gods, is in the latter work conducted by human beings as one would have encountered in everyday life. As the need for manual labor to maintain industrial means swelled in the eighteenth century the sweat of human labor morphed in its perceived value from a lowbrow means to the awestruck realism of glowing coal fires, futuristic machinery, and other mechanisms of industry. While Klingender does not delve deeply into any one of the artists or poets he mentions in this text, the book is a strong survey of a time frame where the meaning of “work” was drastically changing. For his

chapter on painting, he uses the title “Joseph Wright of Derby,” although Wright’s work is taken as merely representative of general tendencies of his time.

For the purposes of this dissertation, Klingender’s chapter titled “The Sublime and the Picturesque” offers the most in terms of illuminations of the aesthetic character of this time in history. The three main guiding texts on the subjects of beauty during this era would be: Edmund Burke’s *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and the Beautiful* (1757), Sir Uvedale Price’s *An Essay on the Picturesque*, and William Gilpin’s *An Essay on Prints*⁶¹ (1768). As aesthetic discourse of the time was pre-Kantian, there had yet to be a complete dismissal of Aristotelean metaphysics and the Cartesian paradigm was embedded within philosophic discourse. A veritable war raged between empiricists and rationalists, and the problems of mind/body dualism had yet to be addressed.

In terms of aesthetic discourse of the eighteenth century, Edmund Burke’s conceptions of the sublime, beauty, and curiosity were *de rigor*. Briefly, Burke associated feelings of overwhelming darkness or despair with the sublime. The vast tempestuous ocean, or imposing mountain scapes—the moments when a person encounters vacuity, silence, extreme darkness or light (as from the sun)—are all to be associated with the sublime. It refers to those moments when a person recognizes their fundamental “smallness” in relation to the world and its many forces. Conversely, the beautiful is when a person encounters the perfectly small and satisfying. Smooth worked surfaces, clearly intended lines, applied colors (opposed to those lines and colors necessarily found in nature), and delicate moving parts are all associated with the beautiful for Burke. Beauty is associated with tenderness and parental love. It is the moment when a person encounter’s his or her own “largeness” in relation to the world. A third and more simple aesthetic concept is that of curiosity. Curiosity is, according to Burke, “is the most superficial of all the

affections; it changes its object perpetually; it has an appetite which is very sharp, but very easily satisfied, and it has always an appearance of giddiness, restlessness and anxiety.”

The picturesque occupies a medial space between the sublime and the beautiful. It is the scope of life as can be grasped by the human body both visually and physically—one can accessibly walk the lengths depicted in a picturesque landscape, for example, as opposed to the monumental distances that are often depicted in images described as sublime. Coined by William Gilpin as the type of beauty that would be best captured in a picture—hence the “picturesque”—there is in the concept an inherent nod towards the production of images beyond idealized or rationalized states like the sublime or the beautiful. What is more, there is a nod towards a burgeoning middle class of people as producers and consumers of this middle distance of aesthetics. Often described as rustic or rugged, “accidental irregularity” was constitutive of the picturesque. With minimal means of unity, and an emphasis on approachable wildness, the picturesque became a driving force for Europeans.⁶² The connections between the picturesque and the growing middle class of travelers has been explored by scholars such as the aforementioned Simon Schama, as well as Christopher Hussey and Malcom Andrews. In the interest of brevity it is sufficient to say that the idea of the picturesque cannot philosophically be disassociated with the concept of the middle class. As I will discuss in the next sections, the science paintings of Wright maintain a direct relationship with the picturesque as well as the developing middle class of Industrial Revolution England.

Klingender taps into an important precursory attitude toward the eventual uproar against the Industrial Revolution that arose just after the turn of the nineteenth century (shortly after Wright’s death). This attitude has implications in the aesthetic discourse of the picturesque and is apparent in Wright’s visual discourse. First it should be established that the sanctity of science,

in terms of scientific knowledge and experimentation in pursuit of metaphysical law, can be seen as the fuel upon which certain human corruptions feed. Greed, mass-production, materialism, et al are buoyed by the development of scientific knowledge. In no other period of history do we find such a surge in technology and industry than the eighteenth century and that growth can be credited by and large to the development of scientific knowledge, and the dissemination of that knowledge via the tenets of the Cartesian paradigm and the inception of the scientific method. It should be understood that in the context of the Industrial Revolution science, industry, and technology are cousins that influence one another to such a degree that no one individual of these fields can rightfully be isolated from the others. Those living in the midst of this revolution were keenly aware of this triad and assumed a number of different attitudes towards it. Some (the rising middle class, for example) embraced the practical fruits of theoretical science with open arms. Others, such as the Luddites, disparaged the advances of technology and industry (and by implication the sciences) as greed incarnate. And then there were those who chose more moderate stances, if not so morally defined.

Klingender equates the picturesque with a sort of looking away from the swift and massive changes that characterized the epoch. The rocky and decrepit character of the picturesque is not isolated to the subject of nature and is often applied to the larger scale material evidence of industry. Describing works admired by Sir Uvedale Price, Klingender generalizes about the typical results of the picturesque applied to the works of man: "The extreme intricacy of the wheels and woodwork of the watermill [for example], combined with moss, weather stains, and plants growing out of joints in the walls, together give such buildings great charm for a painter, provided only that it be old and battered" (74) The paragraph that follows this reveals a motivation for this mode of composure: "Theories such as these allowed the artist and his

patrons to escape the more baleful aspects of industry by pretending it was already worn out. The rules of the picturesque allowed the intrusion of steam engines or mills or mines only if they were given an air of decrepitude or made to appear ancient and ruinous, and so harmless” (74).



Fig. 3. *Freestone Quarries*, (1798), John Hassell,

Woodcut Print on Paper,

<https://www.victoriagal.org.uk/galleries/jane-austens-bath-image-gallery>

A typical example of this scene is given above with a painting by John Hassell (1764-1825). *Freestone Quarries* (1798) shows the precisely cut stone blocks gouged from the earth as a non-disruption to the idyllic nature of the scene to the right of the quarry. In this image industry and material revolution are a congenial part of the English landscape. Though they are thoroughly removed from the genre of landscape, we shall see that Wright executes his science

paintings with a combination of both of the attitudes. There are glimpses of Uvedale's optimism and shadows of the coming disdain for the developments of industry and science. Whether his portrayal of the sciences in social settings are indeed a cheery denial of the effects of the growing reach of the industrial revolution or if Wright's optimism carries deeper implications of critique is discussed in more depth in the next sections. For now we must bear in mind that the picturesque can carry with it an underlying sense of denial. To be clear, science, technology, and industry compose the underlying forces of the Industrial Revolution. The originally noble pursuit of scientific knowledge (what many philosophers would call "pure science") quickly became exploited for the purposes of production and the creation of more affordable material means. Wright's paintings clearly work within the realm of pure science, as there is little productivity or material gain at stake with the scenes portrayed. But Wright and his milieu were acutely aware of the turn of science towards industry. The fact is that within Wright's immediate social sphere industrial wealth was the source of the leisure time and resources for education that would allow scenes such as he portrayed to be a reality for the growing middle class.

Art in the Industrial Revolution offers us one final point for consideration before discussing the science paintings. In a very brief section of his chapter titled "The Age of Despair," Klingender discusses William Wordsworth and Samuel Taylor Coleridge's *Lyrical Ballads* (1798) in a brushing reference to the relationship between poetry and science. The book's poems (particularly "The Wanderer" by Wordsworth) are the larger subject of this chapter, with Wordsworth's critique of human corruption and greed at the heart of the matter. Child labor, environmental concerns, and the general disruption that industry placed upon the traditional rural life are touched on, but all with a full acknowledgement of the advantages and glories that scientific knowledge can provide for humanity. Quoting Wordsworth's preface,

Klingender discusses his own perceptions on the following statement: “Poetry is the breath and finer spirit of all knowledge; it is the impassioned expression which is in the countenance of all Science” (91) Klingender finds Wordsworth to hold equal parts optimism and pessimism in terms of a reunion between the arts and sciences, but then quickly moves away from the topic of knowledge, art, and science. He chooses instead to focus the bulk of the chapter on all of the upheaval groups such as the Machine-Breakers and Luddites wrought upon the Industrial Revolution. The present chapter of this dissertation will argue that the notion of equal parts enthusiasm and mistrust can be found in Wright’s science paintings. The painter’s contemporary moniker of “Moderate Wright” indicates recognition that his work represents a middle grounds between these two poles of optimism and pessimism about science’s social and material effects.

The Philosopher Painting: Analysis of Wright’s “Science Paintings”

The Science paintings by Joseph Wright can be organized into pairs by subject matter for the ease of discussion. It is unknown if he consciously created these works in pairings, but for the purposes of this dissertation I will break this chapter on the Science Paintings into sections discussing the pairs of works as follows: the philosopher paintings, the science and society paintings, and the artistic anatomy paintings. As I proceed in the analysis of these works, I will first discuss the visual elements at hand. This will include the objects represented, the figures, the settings, and the typical symbolic readings thereof. Next I will discuss the aesthetic visual discourse in terms of the beautiful, the sublime, and the picturesque. These would have been the key terms of aesthetic philosophy during Wright’s time so in order to avoid anachronism, I endeavor to keep this part of the discussion germane to these concepts (for fuller definitions of these terms see the section on Edmund Burke). I will next explore the historical significances of

the works in terms of broader Art History. Finally, I aim to elaborate on the aesthetic philosophy at play as regards the history of ideas, in particular the Cartesian paradigm and conceptual universalism (for more on these concepts see the chapter on *Mathesis Universalis*). As I move through these analyses, I will show how placing Wright within the context of the history of scientific ideas, rather than limiting the discussion to historical circumstances, enriches our understanding of visual philosophic discourse.

Beginning with the philosopher paintings, the pair consists of *The Alchymist, in Search of the Philosopher's Stone, Discovers Phosphorous, and prays for the successful Conclusion of his operation, as was the custom of the Ancient Chymical Astrologers (The Alchemist)* painted in 1770 and exhibited in 1771 at the Society of Artists, London; and *A Philosopher by Lamp Light (A Philosopher)* painted in 1769 and exhibited that same year at the Society of Artists in London. As both works contain a single central figure of a scientist at work, a pair of wary young onlookers, and the presence of manmade light as well as moonlight, the pairing is quite natural.



Fig. 5. *A Philosopher by Lamp Light*, 1769, Oil on Canvas, 50 ½ cm x 40 ½ cm, Hayward Gallery, London.

https://en.wikipedia.org/wiki/A_Philosopher_by_Lamplight

Where the two paintings diverge is in the vocation represented, the setting of the subject matter, and the underlying mood of the two pieces. While both are possessed of a certain mystique (the cautious demeanors of the onlookers, as well as the uncanny moonlight) the Alchemist maintains more reverence, as opposed to *A Philosopher*, which conveys a certain melancholy. Whether that melancholy is coincidental to a prototype (a dramatically mournful *Democritus* by Salvator Rosa was abuzz during this time frame) is inessential to this discussion beyond mentioning that sadness is not typically associated with classical representations of

Democritus, who is canonically represented as the “Laughing Philosopher” and as such is typically depicted mid-guffaw.



Fig. 6. *Democritus in Meditation*, Salvator Rosa, 1650, Oil on

Canvas, 344 × 214 cm (135.4 × 84.3 in),

[https://commons.wikimedia.org/wiki/File:Demokrit, hensunken i betragtninger.jpg](https://commons.wikimedia.org/wiki/File:Demokrit,_hensunken_i_betragtninger.jpg)

The sadness in Wright's painting is only conveyed by the posture of the figure. The facial expression is somewhat bemused, only the slouch of head to hand indicating ennui. Wright's Democritus, while certainly not jubilant or reverential, is more possessed of his wits and holds more interest in his task at hand and immediate surroundings. Beyond the central figure, there is more optimism in the setting of cave in nature than in the flotsam and jetsam strewn cemetery of Rosa's painting. While still not neat and orderly, the unified substance of stone provides a visual tidiness that, if not overly welcoming, does invoke a sense of the naturally ordered. The universe of this painting is bare, but not bleak. A trickling stream, a work table, and a sturdy lantern are provided in view so that one may understand this philosopher to have what is needed. They communicate a gentility about this exile—the philosopher could be there by his own wishes, or could choose to leave if desired.

With this in mind it is difficult to understand the central figure as Democritus beyond the tentative mention of that Philosopher's name in a letter of Wright's. But the inconsistency in the title of this work in itself opens up philosophical discourse. The painting is titled "A Philosopher by Lamplight" in the Egerton catalogue raisonne⁶³ of Wright's work but that same catalogue identifies the Philosopher as Democritus: "Wright had exhibited his picture as 'A Philosopher by Lamplight' but he soon began to refer to it as 'Democritus' or 'A Hermit Studying Anatomy,' perhaps because he found that his source was readily recognized as Rosa's 'Democritus' and Pether's engraving of it was published in 1770, presumably with Wright's full authorization, as *The Hermit*" (91-2).

The un-settled-upon title gives one pause for consideration of Wright's valuation of the specific vs. the universal. The flitting from one title to another by Wright's own hand indicates a change in Wright's views of the viability of the work as a specific allegory. The more generic

title of ‘A Philosopher by Lamplight’ indicates a resistance towards specificity of content. This could be because Wright painted the piece on speculation,⁶⁴ and as such granting a specific name to the central figure might impede the interest of a potential buyer. But in consideration of the other five works in his series of Science Paintings (no other of these works is christened with specific names), the generic title indicates a leaning preference for form rather than content. It is not any specific philosopher, it is rather just *a* philosopher.

This is very telling of the shift in philosophical (read scientific and philosophical as the two had not yet been fully separated as disciplines) preference for universal expressions. “A Philosopher” is no specific philosopher, and could be any philosopher known to the viewer. This indicates that Wright was aware of the value of universal expressions. It tells us that at the moment of 1769, the concept of universal variables (like X, Y, and Z in algebraic expressions) had begun to infiltrate disciplines beyond the hard sciences. I argue this is due to the advent of Cartesian discourse on universality. As Egerton, Benedict, and Graciano all indicate the chronology Wright first exhibits the work as “A Philosopher by Lamplight,” unofficially refers to it in two letters as “Democritus,” and then settles finally on the title of “The Hermit” when the work is reproduced by printed means. This means that Wright himself begat the work with no titular specificities in mind, later considered a specific and Classical baptism for the central figure, and in the end chose an even less specific title for the piece—the word “philosopher” offers more descriptive power than does “hermit” as the former indicates a vocation and the latter indicates only a social choice. In the other Science paintings, Wright also declines to give specific names to the figures at hand, instead choosing to place the emphasis on the materials at hand. “The Alchemist in search of the Philosopher’s Stone, Discovers Phosphorous, and prays

for the Successful Conclusion of his Operation as was the custom of Ancient Chemical Astrologers” is the proper title of the other work in this pairing.

The other Science Paintings are similarly centralized around the material at hand. *An Academy by Lamp Light*, and *Three Persons viewing the Gladiator by Candle-light*, (the artistic anatomy paintings) have at their loci the statues being studied. *The Orrery* and *The Air Pump* (the science and society paintings), too, have the material means of science at their locus. The centers of each of these works is discussed in greater detail in the sections devoted to those pairs, but it is sufficient to say that the human response to the material at hand is key to understanding the artistic statements made by Wright.

The visual effect of the central figure’s hermitage in *A Philosopher* of course recalls Plato’s allegory of the cave. This is more a nod toward the aesthetic concept of the picturesque than a direct reference to Plato. As mentioned above in the discussion of Burke and Klingender, the picturesque is an aesthetic mode that is rugged, unorganized and unarranged, yet approachable by the human psyche. Wright’s representation of the philosopher removed from the more sterile grounds of an academy or laboratory nods directly to the conception of the picturesque, and thus secondarily nods to a growing accessibility of the middle class to philosophical discourse. The philosopher is placed within a slightly haphazard arrangement of rocky terrain in which the actual depths and heights of the stone landscape is hard to grasp, yet not frightening in nature. The young pilgrims⁶⁵ are less than sure footed as they hesitantly approach their interlocutor, and yet they have reached their intended terminus. Even the traditional arrangement of the skeleton has been forgone in favor of a partial skeleton laid loosely upon the table. The knee join being tinkered with is held in an unorthodox position near

the skull, indicating a lackadaisical mode of study—not necessarily disinterested but certainly not studious or professional.

What Wright puts on offer is a philosopher removed from the pristine and privileged Academies populated by privileged clergy or the entitled elite. He has placed science and philosophy in the picturesque. That is to say, he has placed science and philosophy within the reach of the middle class. This is in fact the only of the Science Paintings that does not include sophisticated equipment or priceless models of study. Here the average pilgrim approaches science and philosophy in an arena accessible by the means of one's own two feet.

The study of anatomy portrayed in *A Philosopher* differs from the artistic anatomy paintings. The aim of the figures in the artistic anatomy paintings is superficial—studying the outside of the figure for proportion and sharpening one's skill at capturing likeness. The old man in his cave is tinkering with the kinetics of the knee joint, a pursuit of knowledge rather than an exercise in visual skill. The work at hand is clearly aimed at science, while the work of the artistic anatomy paintings is aimed at art. By this distinction, Wright alludes to the idea of what properly belongs to science and what properly belongs to the arts: knowledge belongs to science, and skill belongs to the arts.

As with *A Philosopher*, *The Alchemist* is enigmatic as to what time period is being portrayed and what the exact nature of the mood is meant to be. Either of these works could be historical allegory, subject paintings, or conversation pieces. However, the overall generic nature of the settings, clothing, and titles does not afford the viewer any specific recognition of the scene at hand. While this could be cause to critique Wright for ineffectual expression, I argue that he was working to privilege the form of expression rather than the specificity of meaning, a concept (form) that has deep roots in the Cartesian paradigm.



Fig. 4. *The Alchemist, in Search of the Philosopher's Stone, Discovers Phosphorus, and prays for the successful Conclusion of his operation, as was the custom of the Ancient Chymical Astrologers*, 1771, Oil on Canvas, 127 cm × 101.6 cm (50 in × 40.0 in), https://en.wikipedia.org/wiki/The_Alchemist_Discovering_Phosphorus

To open this discussion, it would have been a known fact to Wright that the inventor of the method for creating phosphorus was Hennig Brand (or even the often mis-credited Gottfried Leibniz who purchased the method from Brand). As a participant in the Lunar Society, the history of chemistry was certainly available. If the facts was not in his own personal epistemological repertoire, resources on the subject matter would certainly have been available to him. The figure in *The Alchemist* is neither Leibniz nor Brand, nor any other recognizable figure in the coterie of Wright's friends and associates.⁶⁶ The old man recalls Renaissance

figures of St Jerome or St Francis that Wright may have encountered during his pilgrimage to Italy (Egerton 20). The generic nature of the central figures in both *The Philosopher* and *The Alchemist* offers us insight into Wright as a thinker. By choosing to portray a figure that has no specific identity for the viewer, and by placing said figure in a non-specific chronological space, Wright has privileged the overall expression of the painting, rather than the pictorial content. What is more, is that Wright has chosen for both of these works to offer a universalized visual expression of what he understand scientific work to be.

The men in the philosopher paintings are working in non-dedicated environments to the study of science. Neither man is a specific figure by rights of the titles granted by the artist nor by likeness to any figure that we know to have been an associate of Wright's. The work at hand is the only specificity granted in the paintings. The Philosopher is studying kinetic anatomy and the Alchemist has discovered phosphorous. All other aspects of the piece are generic structures added to the specific theme of the work of science. They are universalized ideas of settings, people, and time. As such they are in dialogue with Descartes' conception of mathesis universalis. Wright has employed reductive means to express certain "variable" visual elements that surround a single specific concept, much like the many modes of universalization discussed in the previous chapter. As in algebraic expressions, a variable stands in place for unknown numbers or objects. It curbs the attention of the mathematician towards the tasks at hand rather than the as yet unknown. Wright's visual variables (chrono-tope, names of people, exact origins, locations, etc.) direct the viewer's attention to the work being done. But there is a clear secondary visual message: the work being witnessed and un-isolated. It occurs beyond the theater of the mind and has direct and indirect participants.

The primary witnesses of events in the philosopher paintings are the pairs of young male figures that feature in each work. The nature of the two boys present in each painting is that of interlocutor—they are not directly engaged in the work and appear to happen upon it. Indeed the focus of each central figure could carry on without their presence. This begs the question as to why Wright included them at all. Why paint in figures that are irrelevant to the locus of the visual expression? A consideration of the light source in the works is most revealing. In the *Philosopher* the oil lamp hangs slightly behind the philosopher. The boys appear to be approaching the philosopher from the right and must peer around some rock formations to see into the philosopher's cave. Their view of the source of light is obstructed by the wall-like rock formation. They would see the shadow cast by the philosopher, perhaps his backlit figure. The philosopher himself does not look at the light source, but could do so unshielded should he choose to do so. A similar vantage is granted to the alchemist. The boys are off to the left and behind a wall—they would be unable to see the light source, but would have certainly wondered about the glowing light source and seen the dance of shadows across the stone walls of this space. We, as the viewers can see both the light sources, the central figures, and the witnesses *in toto*. It must be made clear here that while there is certainly some reference to Plato's *Allegory of the Cave*, I do not feel that any particular comment on Platonic dialogue is in play with Wright's paintings. Wright instead makes use of the operational discourse that is at play within Plato's Cave. That discourse with Descartes can be understood in terms of what I refer to as *the epistemological gaze*.

What I refer to with this term is more than just a “knowing glance” or “privileged position,” although both of those concepts relate to the idea. The epistemological gaze refers to the focus of rational attention within a work of visual art. It can be possessed by one or more of

the figures in a work of art, and/or by the viewer observing the piece. It is a vantage point that allows clear and distinct understanding of the subject matter at hand. In the philosopher paintings, the central male figures have full knowledge of what is light, what is mere shadow, and what forms casts those shadows. The scientific nature of the work at hand, truly the locus of these paintings, is in full illumination and those who can see both the work and the light source are granted clear possession of the epistemological gaze. What is so striking about these works, however, is that the viewer has the most omniscient vantage point. As such, Wright intentionally supplies us, the viewers, with an understanding that there exists an epistemological class system at play within the work of science. There are clearly those possessed of clear and distinct knowledge, and there are those who can only see the shadows cast by forms surrounding the proper work of science. As Descartes demands clear and distinct hypotheses for scientific pursuit, Wright makes it clear that there are only a select few who are possessed of clear, distinct, and fully illuminated circumstances.

These paintings are a step towards a “formal system for expression.” As with all of Wright’s Science Paintings the central figure is unnamed, even if it is logically clear whom the figure would reference. Wright fails to specify the identity of the figure at hand, indicating a privilege of form over content. *The Philosopher* and *The Alchemist* share a second non-descript point of time period at hand. Time and identity are unimportant it seems. The focus is on the reverence human beings hold for the miraculous nature of the *ordered* universe God has created.

Beyond the move towards formal and universalized systems of expression, Wright provides another layer of discourse by describing the sublime, the picturesque, and the beautiful in a cohesive image the realm of science, without the specificity of names, places, or dates. He has found a way to express those concepts within the context of the scientific community.

What's more is that by the inclusion of all three elements of pictorial scale, he has found an avenue for expressing the all-encompassing reaching of universalized expression. The fine, smooth jars and vessels that surround the alchemist, as well as the intricate structures of the partial skeleton in *The Philosopher* recall the conception of beauty. The mysterious glowing substance and the upturned, awestruck expression of the old man invokes the sublime. The smallness of the figures in *The Philosopher* compared to the rocky landscape conveys the same sense of the smallness of humanity. Science is portrayed as the realm of the picturesque. For Wright, Science is the arena where the beautifully small and perfect objects like tools, glass beakers, and timepieces are manipulated to reveal the sublime power of the ordered universe. As none of Wright's personal correspondence indicates a strong religious leaning, it is difficult to speculate as to whether he felt compelled to express a reverence for God or in fact it was a reverence for the unfolding order of the universe, whether that be due to God or nature.

The Science and Society Paintings

The two paintings in this pairing are *Experiment with a Bird in an Air Pump* (*The Air Pump*)(1768) and *A Philosopher giving a Lecture at the Orrery* (*The Orrery*)(1766). The two works involve figures seated along a round table at various degrees of face towards the viewer, and feature elaborate and strange scientific equipment being demonstrated for group of men, women, and children. They differ in timbre greatly.



Fig. 7. *A Philosopher giving a lecture on the Orrery in which a lamp is put in place of the Sun* (1766), Oil on Canvas, 47 cm × 203 cm,

https://en.wikipedia.org/wiki/A_Philosopher_Lecturing_on_the_Orrery

The Orrery, completed first has a certain optimistic cheeriness folded into its visual texture. The *Air Pump* has a dark, nearly intrusive tone for the viewer: Though this pair of painting chronologically precede Kant's *Critiques* by at least a decade, a brief jump ahead to his first *Critique* sets the tone for our discussion of these two paintings: "The light dove, in free flight cutting through the air the resistance of which it feels, could get the idea that it could do even better in airless space. Likewise, Plato abandoned the world of the senses because it posed so many hindrances for the understanding, and dared to go beyond it on the wings of the ideas, in the empty space of pure understanding" (Kant, *Critique of Pure Reason*, 129).



Fig. 8. *An Experiment on a Bird with in the Air Pump*, 1768, Joseph Wright of Derby,

[https://upload.wikimedia.org/wikipedia/commons/2/22/An Experiment on a Bird in an Air Pump by Joseph Wright of Derby, 1768.jpg](https://upload.wikimedia.org/wikipedia/commons/2/22/An_Experiment_on_a_Bird_in_an_Air_Pump_by_Joseph_Wright_of_Derby,_1768.jpg)

With this elegant allegory, Kant rebukes Plato for his unwise reach beyond that which can be rationally understood or empirically experienced. For Kant, the theater of the mind must ground itself in the world as it can be clearly and distinctly understood less it become crippled by its own desire to effortlessly possess things as they are. The bird which readily flies with ease wants even still more ease of movement. For Kant, Plato's Ideal world (or Descartes' purely rational mental theater) seems a superfluous, even greedy addition to the real one.

The metaphor of the bird's flight into a vacuum is eerily foreshadowed in Wright's *The Experiment on a Bird in the Air Pump*, 1768. Painted thirteen years prior to the publication of

Kant's first critique (1781), the piece also speaks volumes on the uneasy march of scientific progress; a march set in place over one hundred years prior, by Rene Descartes' radical rationalism and objective world-view. His idea that knowledge of this world is "what we can perceive thus it is rightly what we should pursue" runs counter to that of Plato recalling Kant's above mentioned critical view of the Platonic Ideal. Descartes, convinced that unaccountability ran rampant in the science of his time, went so far as to "triage" knowledge into various strata of fundamental importance. Each of the layers of knowledge (beginning with metaphysics, leading through the various hard sciences, terminating at morality) are to be discovered by the demystified self as she expands her knowledge of a clockwork universe. Each layer informs her knowledge of the next. Knowledge is only classified as such when it can be abstractly demonstrated and verified through reproducible means. What is lacking is an inward gaze on the circumstances of the self—a void that all of Western philosophy since Descartes has been trying to fill. The fleshing out of social concepts (language, hermeneutics, gender, class, history, aesthetics, and psychology) has led to the certain understanding that for the self to be truly demystified (and thus able to account for the universe around it), the epistemological gaze must be turned inward as well as out. The very things that Descartes removed in his hyperbolic doubt, things that appear to him as biased or doubtful, are informative to truths that elude the expressions of *mathesis universalis*. Yet without these cast-off social and subjective truths, knowledge cannot exist. Knowledge cannot be created in an objective vacuum. As a poignant example of this counter to the Cartesian epistemological paradigm, I argue that Joseph Wright of Derby in his Science paintings visually demonstrates that there is knowledge of a sort that can only be expressed via the *poiesis* of painting, thus rebuking the Cartesian epistemological schema.



Fig. 9. *An Experiment on a Bird with in the Air Pump*, altered by author for purposes of this dissertation.

Of all the science paintings by Wright, *The Air Pump* makes the strongest first impression. The world shown has a complex visual vocabulary and other scholars, Benedict Nicholson and Judy Egerton in particular, have done a marvelous job of translating that visual language into written prose. But both have missed a very significant passage in this painting. It must be understood that the approach I will presently explain does utilize historical and philosophical speculation, but it is my intention to use said speculation in order to reveal a clear dialogue between the aesthetic imagination of the eighteenth century and the Cartesian paradigm. I endeavor to ground my speculation in as much factual evidence as I am able.

If one were to use a subtractive method on *The Air Pump* the nature of the discourse of Wright's work is radically changed. If one removes the women and children from this painting,

an underlying message is revealed in this work. We find a representation of the scientific world as perhaps Descartes idealized it to be. You would find the learned philosopher speaking to the young man across the table. The two other gentleman, not as young and naïve of the implications of this experiment, are engaged in conversation about the workings of this fantastic machine. The atmosphere of just the male figures is one of studiousness, of industry, of academic prowess. It thus precisely imagines the scientific paradigm in its proper context, as Descartes would not have considered women and children to be party to discourse.⁶⁷ These four figures are an echo of this paradigm. Careful scrutiny of the image reveals that the addition of the women and children is contextually superfluous. The men, that is to say those in the picture who are properly suited for science by the standards of the day, still converse with only themselves. The true tone of the work at hand is revealed with the removal of those to who science would only be a novelty. So it begs the question as to why Wright chose to include the others. What is being said with the inclusion of these figures that appear to be removed from the scene's discourse? I offer three possible answers for consideration:

- 1.) Wright was proving his skill as a painter for the purposes of securing future commissions.
- 2.) He was illustrating some facsimile of scientific events as they might have occurred during his lifetime and the milieu of the Industrial Revolution.
- 3.) He was in fact engaged with Cartesian philosophical discourse about the propriety of scientific means. It should be understood that no one of these three avenues precludes any other.

Pursuing the first line of thought, the complex visual nature of *The Air Pump* does raise the possibility that this piece was created as a showcase of the Wright's skill as a painter. The

candle-lit ambiance delicately illuminating the round table of figures (each a demonstration of the artist's skill at capturing profile, $\frac{3}{4}$, and portrait views of the face) is a remarkable feat of composition. The varying ages of the figures shows Wright's facility capturing a likeness of a person of either sex at any age. So too with the range of emotions displayed at this gathering. But the *unheimlich* nature of the subject matter is so dramatic that it is unlikely that Wright composed this picture to be pure advertisement. The fact that it is clearly someone's pet in the bell jar (it is a cockatoo, an exotic bird, and the cage above the group indicates this is not livestock), for example, is a strange choice indeed if one were inviting commissions.

The second line of thought views *The Air Pump* as illustrative of scenes that might have occurred during Wright's time. It is true that James Ferguson, the Scottish inventor, traveled through Great Britain giving lectures and demonstrations of the effects and utilities of vacuous space. It is unlikely, however that women and children would have been present for such things, or that they would have been held in someone's home. Ferguson's forays into the Midlands spanned several years (most accounts state 1739-1743) and gave lectures a public speaking venues on a range of topics such as astronomy and the use of an Orrery, pneumatics and the effects of vacuum pumps, and mathematics (algebra and geometry specifically). By all accounts these lectures were largely attended by men only, though a few women are on record as being admitted in the company of their husbands.⁶⁸

The third avenue to pursue offers the most philosophical depth. Wright's work shows us a continual dialogue with scientific philosophy. For Descartes, the demystified consciousness must pursue hypotheses without bias, emotion, or attachment. In effect, Descartes' imagined science to occur in a vacuum of sorts. While the vacuum may contain air, human beings, and the observable universe, he very much intended the humanities and mundane realities to be ignored

as those aspects are subjective and emotional in nature. They cannot provide reliable, mathematical truths. This is not to oppose Descartes' refinement of focus. Clarity is easier to achieve when unfettered by life. But the cost of the clarity could only be afforded by a very few. Economically speaking, one must have the means to pursue research.

Industrial concerns are to be considered with the sciences as well. Needs typically inform experimentation. Needs are typically industrial in nature, and particularly from the Enlightenment on. Can the bias of human need be truly removed, even in cases of "pure" experimentation? Is theoretical knowledge truly to be upheld in such a "holy" manner? Of course these questions have been put to the Cartesian paradigm by more experienced philosophers than myself, but a distinct moment of discourse with these questions can be found in the Science paintings of Joseph Wright.

What is said by the inclusion of these additional figures? The inclusion of the other figures in this scene is what provides the critique of the Cartesian paradigm, particularly the concepts of the objective universe and epistemological proof. The two young girls and the older man to the right's downcast gaze break the visual passage of a conversation between two men of science. Instead, two other passages are to be seen and neither involve the learned patriarchy engaging only in itself. There is now the fatherly figure trying to impart the objective knowledge to the disturbed children, and there is contemplative old man staring at a carious skull near the candle on the table. The concepts of sacrifice and inevitable death are conveyed through the addition of the social reality of children.

The Orrery is not possessed of the same degree of uncanniness as *The Air Pump*. The tone of this setting doesn't include a singular moment of tension. The figures are peaceful in their contemplations of the mechanical wonder before them. Painted two years prior to *The Air*

Pump, this piece conveys a great sense of scientific optimism. The cheerful gaze of the children, the deep interest of the audience, and the naturalness of the transaction between the philosopher and the man who appears to be his assistant all express a serene comportment that is completely absent from *The Air Pump*. Similarly to *The Air Pump*, the male figures converse with one another unfettered by the presence of the women and children.

It is interesting that the eye isn't drawn immediately to the clearly authoritative figure of the philosopher. Instead the viewer's gaze is directed to the glowing faces of the children beneath the philosopher. Wright clearly intends the philosopher to be prominent. His height above the other figures, his advanced age, as well as his imposing posture indicate that he is the one speaking. But oddly he is not the clear center of attention. One can nearly hear him speak in a background noise kind of drone, as he rattles off readings of degrees and notes on position of the planet. All the while our first glances are directed to the two children with beaming faces. The age of these children indicates that they would likely not be able to grasp the concepts on display at the Orrery, but their delight in the tiny mechanism is clear.

We the viewer have no direct view of the light source in either of the science and society paintings. In both cases the light source is obscured in such a way that we can know from where the light comes, but cannot actually take measure of it. In *The Orrery*, the lamp's reflection is depicted, but Wright only grants the viewer this facsimile of light. *The Air Pump* gives little clue as to whether the light source is a candle or a lamp, but it is in either case clearly man made.

The Artistic Anatomy Paintings

Between *A Philosopher* and the two artistic anatomy paintings there exists a discourse that reveals much about what is to be properly allocated to the fields of art and science in terms

of the common ground of the study of anatomy. *Three Persons viewing the Gladiator* was the first of Wright's science paintings, though it is not known whether he, at the time, he intended the work to be properly of the "science works" or if it was a first foray into exploring scenes lit by candle or lamplight.



Fig. 10. *Three persons viewing the Gladiator by candlelight*, 1765, Oil on Canvas, 121.9 x 101.6 cm, <http://www.artic.edu/aic/collections/artwork/137059>

As Wright does again include the subject matter of anatomy-study (both artistic and scientific) four years later with *The Academy by Lamplight* and the aforementioned *Philosopher* painted that same year, it is sufficient to say that these works are rightly grouped into the science paintings as the treatment, lighting, and subject matter all correlate to those of the works that more overtly handle what we would today consider the hard sciences.



Fig. 11. *An Academy by Lamplight*, 1769, Oil on Canvas, 101.2 x 127 cm

<http://fineartamerica.com/featured/academy-by-lamplight-joseph-wright-of-derby.html>

As an artist, the study of anatomy would be the most facile of the sciences for Wright to comment upon so it is no surprise that the topic arises in three of the six science paintings. Those of the strictly rationalist camps of contemporary philosophy would perhaps be scandalized to find artistic anatomy included within the ranks of chemistry, astronomy, and physics. Yet this in part why Wright's science paintings are such a unique moment in the timeline of art theory. His mindset as painter and a contributor to philosophical discourse do not include the linguistic (let

alone the specialized professions) separation of philosopher and scientist. It is not that he is trying to unite the arts and sciences after they have been split, as many twentieth century artists and philosophers have done. It is that he views them as natural equivalents, bound by the common noun of philosopher and the identical practice of intense study. Andrew Janiak points out for us in his discussion of Newtonian natural philosophy, the trend of linguistically specializing the fields of science did not happen in Wright's lifetime. Specifically, at a meeting of the British Association for the Advancement of Science in June of 1833, the Cambridge philosopher William Whewell coined the word "scientist." At the meeting, Whewell said that just as the practitioners of art are called "artists," the practitioners of science ought to be called "scientists," indicating that they should no longer be called philosophers. Indeed, before the early nineteenth century, people like Newton were called "philosophers," or more specifically, "natural philosophers." This might appear to be mere semantics, but it is not. During the seventeenth century, and well into the eighteenth (at least until 1750, if not later), figures like Newton worked within the centuries-old tradition of natural philosophy.

Wright chooses to include the study of artistic anatomy in his series of candlelit paintings in order to give a tacit nod to the fact that the studious and industrial of human knowledge need not only include what are now known as the hard sciences. To finalize this point, recall that the light source in all of these works is man-made. The man made light evokes in the viewer a sense of the power of the human will and the luminous capability of the rational mind at work. Wright clearly stood in awe of the tenacity of the quest for knowledge and the harmony that organized knowledge provided to man's reason. As such, the drive to possess the qualitative, that is to say aesthetic, knowledge of human anatomy should be viewed in no less a light. A palpable sense of passion and dedication pervades these six pieces. There is a tacit tone of dedication to both of

these works (indeed, to all of the science paintings) as they are all set at night. In Wright's time, to conduct work into the night meant an extra expenditure of candles or lamp oil—a not inconsiderable expense considering that for drawing in particular one would almost certainly need more light than for other activities (Recall that the Lunar Society met on the Monday nearest the full moon to make the most of the available light). The dedication represented in these works is aimed at the pursuit of knowledge, which during Wright's time was still non-specialized, and more importantly supported by a network of reproducible experiments and rational axioms. Though the specialized profession of artist had long ago been established in contrast to that of a philosopher (reference Plato and Aristotle sections in Chapter 1 of this dissertation), Wright inhabited an historical milieu wherein such singular professions were unnecessary and even passé. The rising middle class of industrialists were free to occupy more than one profession—something that prior to the Industrial Revolution, was a rarity. His friend and fellow Lunar Society member, Erasmus Darwin for example was a physician, a poet, and a botanist. Peter Perez Burdett, Wright's best friend, was a geologist, cartographer, and mathematician. It would fit the character of his time that Wright would have felt free to consider himself able to contribute to philosophy as that term enfolded so much in his day, and the social circles he frequented encouraged pursuits beyond one's profession.

Recalling the discussion of types of revelatory knowledge (that which can reveal a slant or bias, and that which can reveal things as they are), Wright succeeds in the latter of the two types. If taken as a group, the six science paintings reveal how the work of science “is” for Wright's lifetime. As the character of science is not represented as entirely glorious, nor entirely grim, it is unfair to say he positions the subject towards any one particular point of view. Wright reveals certain truths about the work of science and research that give contextual and social

meaning to the work of science and research. On a deeper, more operational level, Wright reveals to us the participatory nature of the artist in philosophical discourse concerning science and epistemology.

CHAPTER 6

Introduction

In the concluding chapter of this dissertation I aim to widen the scope of the conversation to matters more important to our times. The Cartesian paradigm is immensely important to the course of Western philosophy, but its value today is somewhat obscured by the centuries of criticism that has amassed around it since its advent. German philosopher Hans Blumenberg provides modern thinkers with renewed interest in the Cartesian paradigm. Blumenberg makes an argument similar to Heidegger's: the Cartesian paradigm is the source of modernity in the West. For Blumenberg, however, this modernity need not be shunned or "corrected" as Heidegger would have argued. He nonetheless acknowledges that, as a side effect of the Cartesian epistemological shift, certain areas of the humanities were marginalized, excluded, or made obsolete via the hard focus on objective knowledge that is characteristic of thinking of knowledge in terms of *mathesis universalis*. Blumenberg considers myth and myth making to be a prime example of epistemological technology (a pre-rational means of generating knowledge) that the paradigm made obsolete for a time. He maintains, however, that the fervent "fact finding" of the Enlightenment, and the technological developments of the Industrial revolution, pushed the human drive to "*make knowledge*" in the sense this dissertation articulates. The effect of this "pause" was to renew the impulse and enlarge its effects through redefining its goals and resituating its activity.

Blumenberg asserts that the Cartesian paradigm set philosophy on a course of epistemological rationality that eventually led it to be unable to find "unknown territory" to explore, categorize, and catalogue. This dearth of unfamiliar material to discover and order spurred humanity to begin inventing the unknown—a process that created a new role for myth

and myth making. Blumenberg delves into the myth-related concept of onomathesy (naming) in a manner that I will argue is similar to how we can understand poesis as an important aspect of knowledge making (discussed in Chapter 4). In a brief recap of what I mean by “knowledge making,” three premises are in place:

1. Knowledge in the literal reading of the Cartesian paradigm is typically understood as discoverable—in other words “found.” There are other types of knowledge, however, that are still valid within the operational reading of the paradigm, which is referred to as revelatory knowledge.
2. Knowledge of both types can be objective and “found” but are only knowable through methods that are “made,” not “found.”
3. Both types of knowledge, as we consume them in life, are the product of different types of “making” (ordering, naming, prioritizing, and politicizing of knowledge, etc.).

Though *mathesis universalis* was originally implemented as a means of setting down objective, propositional knowledge (as opposed to picking up, see discussion in chapter 4 for more detail), Blumenberg’s discussion of myth reveals that such a narrow epistemological modality can reach (and perhaps has reached) an impasse if not expanded to include other types of knowledge and knowledge making. Myth, aesthetic discourse, and the epistemological perspectives of interest groups outside of the traditionally privileged patriarchy are examples of the kinds of revelatory knowledge that must now be considered with the same “seriousness” (to use Blumenberg’s word) as the West has long granted the knowledge of the hard sciences. This is because we have reached an epistemic age wherein the “unknown” of the natural world is considerably smaller than in previous historical eras. Blumenberg theorizes that we have entered a time when human reason now has the drive to willfully direct investigations and inquiry

towards circumstantial, subjective facts that influence worldviews—more simply, towards “inward things.” Rather than being directed toward the necessity of survival as it may have once been, *mathesis universalis* can and should be expanded to include subjective and revelatory knowledge.

In this chapter I will connect four different groups that have been traditionally and unnecessarily marginalized from philosophic discourse by the Cartesian paradigm: feminism, fiction, myth, and aesthetic discourse. These groups share the common thread of “non-universality” and perceived epistemological inadequacy. As I will demonstrate in the later sections of this chapter, there has been an active “comparing of notes” between the various groups excluded by the Cartesian paradigm. These comparisons review the means of their exclusion, the power structures at play that perpetuate their marginalization, and the means they engage actively in “course correction.” While the focus of this dissertation is the Cartesian Paradigm and its theoretical and epistemological implications, a broadening of this study’s scope makes it more about the philosophy of science.

In the twenty-first century, there are perhaps no greater philosophers of science than those working in the genre of science fiction. Science fiction authors most consistently point out the pitfalls of scientific optimism and the incompatibility of the innately corrupt human character (as some understand it to be) with the tremendous power of technology. Authors such as Phillip K. Dick and Ray Bradbury look at philosophical problems such as sentience or commercially driven technology in ways that remind us that, armed with science or not, we are imprecise and unpredictable creatures. But the authors most relevant to our discussion deal less with dystopia and apocalyptic scenarios, and more with the perceived schism between science and “not-science.” American novelist Ursula K. Le Guin (1929-2018) approaches topics such as this in

efforts to challenge not the correctness of objectivity, but the authority and finality of objectivity. In this concluding chapter, I will compare the marginalization of aesthetic discourse in the Cartesian paradigm with the marginalization of women in philosophic discourse, revealing their similar treatments at different points in philosophical history. I will then tie our broader theoretical conversation to the writings of Le Guin, as well as to the work of British author Neil Gaiman. I will then use the connections between Descartes and these two authors as a lens to examine a painting by Diego Velasquez— *An Old Woman Cooking Eggs* (c. 1618), contemporary to Descartes.

Working on the Cartesian Paradigm

“The history of philosophy in the century of science is in essence a history of philosophical reactions to what was happening in connection with science in a changed culture.”
 -- Herbert Schnadelbach, *Philosophy in Germany, 1831-1933* (1984)

It can be said that we are in a “post-Cartesian” era. The prefix of “post” indicates that the affixed event is insurmountable or irrevocable. Heidegger in *The Age of the World Picture* idealizes a time before the Cartesian paradigm—a time before the philosophical split between mind and body, between subject and object, became indoctrinated in the West. It is, however, not worth considering how one could possibly “go back” to a pre-Cartesian philosophical climate. Instead, there are philosophers who take into consideration how to “work on” the Cartesian paradigm in a manner of speaking. They find ways to expand upon the paradigm without dismissing it. In my own work with this dissertation, I too seek to work on the Cartesian paradigm by showing how the disconnect between the paradigm and aesthetic philosophy is an unnecessary construct, one based on traditional and literal understandings of Descartes’ texts. As

a reaction to this traditional understanding, many aesthetic philosophers have positioned themselves squarely in opposition to the paradigm via open critique of its structure or via a general dismissal of its integral nature to modern thinking. There are other scholars, though, who seek to acknowledge the Cartesian nature of current philosophical and scientific discourse. Hans Blumenberg is one such philosopher. Blumenberg is not calling for an end to Cartesian rationality, nor does he object to the way that rationality has traditionally been viewed as opposed to aesthetic concepts such as expression and the arts. He instead lays out Descartes' transformative role in philosophy, but in so doing, he calls attention to how the paradigm need not mandate the exclusion of aesthetics, the feminist perspective, and most especially, fiction. In this section, I will give an overview of Blumenberg's operational (rather than literal) reading of the Cartesian paradigm, then discuss how he connects myth to the revolution caused by the paradigm's advent in the West. In so doing I argue that Blumenberg has provided one of the most significant avenues for the expansion of *mathesis universalis* to date.

A key first concept that underlies Blumenberg's philosophy is that the Modern Age is not a drastic or tragic swing away from a "natural course" of history, but a very natural product of the progress of history. Many historians and philosophers (such as Heidegger) view the Enlightenment and its trappings as an event that has severely altered the course of human history. In contrast to Heidegger, Blumenberg does not view the Cartesian paradigm (easily understood as a catalyst to the Enlightenment) as tragic to the state of human existence. On the contrary, he finds rationalism and the philosophy that followed in its wake to be a natural evolution, stemming from a marked turn towards epistemological "seriousness" that occurred during the Enlightenment. He essentially argues in *The Genesis of the Copernican World (GPW)* (1975) that owing to the Aristotelean Scholasticism prevalent throughout the medieval eras, the West

had essentially “over-objectified” knowledge to the point that formal knowledge was drastically removed from knowledge of humanity. Simply, knowledge became a matter of rote applications of ossified technical philosophical terms and ideas, and therefore neither were searchingly engaged with. As a reaction to this “remove” of epistemology from human existence, the Enlightenment and its emphasis on proof and investigation were a natural evolutionary step in Western philosophy. This being the case, Blumenberg clearly is neither for nor against Enlightenment philosophy or judgmental about the effects the scientific revolution has had on its course. He instead treats it simply as a historical progression that has resulted in significant changes in human existence, most particularly in relation to myth and religion. His later book, *Work on Myth (WOM)* (1979) works with the Cartesian paradigm and investigates what the new roles of myth and myth-making might entail in a post-Cartesian era.

For the second key concept of Blumenberg’s approach to the Cartesian paradigm, we must understand that he maintains a conception of the human being as inherently “frail and finite,” but nonetheless evolving. A creature of deficiencies, lacking in environmental specialization, human beings are compelled to use their highly adaptive powers of reason to survive the anxiety inherent in self-conscious existence, a concept Blumenberg calls the *absolutism of reality*⁶⁹. Briefly, reality is absolute in the sense that without codified meaning, any phenomenon could potentially signify anything: a boulder could indicate a memorial, a warning, a spiritual presence, etc. Myth limits the anxiety by limiting the potential meanings one may derive from encountered phenomenon. Descartes makes similar allusions to a kind of inherent state of anxiety in *Meditations*, referring to the immediate sensations (those both corporeal and biological in nature) as confusing and misleading, thus painting the backdrop of existence as mire-like—opaque, directionless, and befuddling. Such a setting can surely be understood in

terms of anxiety over the uncertainty of the world around us. Explicitly, Descartes describes anxiety as deriving from the discordant relationship between mind and body, yet this is but a characteristic “meta-moment” of the anxiety caused by the absolutism of reality.

Descartes and Blumenberg share a sense that the urge to limit the anxiety a lack of knowledge generates is innate to the human consciousness, but a key difference in the conceptualization of theoretical knowledge separates the two stances slightly. Descartes has isolated the discordance between what we are biologically compelled to do, and what reason dictates as appropriate. However, he has done so in a Pre-Darwinian manner—that is to say, without the understanding of human beings as evolving organisms. Descartes writes his theory with crystalline moments of “absolute beginnings” in mind owing to the influences of the Christian cosmogony⁷⁰. Angus Nichols refers to Blumenberg’s stance on this difference as “anti-Cartesian,” though his view that the two interpretations of this matter need be so starkly opposed strikes me as unnecessary. To clarify this stance, we must remember that Descartes understood the universe to be clockwork in nature. Such a paradigm does not give space to concepts of evolutionary change—a clock’s gears and cogs do not adapt or get better at being gears and cogs over time. By contrast, Blumenberg understands the human being, as well as all life on this earth, to be a product of evolution. It is ironic that without Descartes’ scientific method (developed upon the clockwork model), Blumenberg’s evolutionary model would never have emerged. Without the underlying knowledge of biological evolution, Descartes has no way of anticipating the moments of epistemological development as an evolving concept. While this in some ways misshapes his understanding of the machinations of the universe, his model of knowledge making as a method for staving off the anxiety caused by non-knowledge is still sound. As such I

argue that Blumenberg's position as not anti-Cartesian, but *post-Cartesian*—not antagonistic to the Cartesian paradigm, but rather a complimentary addition or modification.

While their respective stances on the human condition as fixed or somewhat fluid differ, both Blumenberg and Descartes place distinct emphasis on reason as essential to the human species, but the nuances of their respective opinions are not completely parallel, nor are they mutually exclusive. Both understand reason to be central to “successful” human activity. Descartes understands *res cogitans* as that which must pursue knowledge separately from the passions. Blumenberg postulates reason as the same, with the addition that he understands the passions and will-to-express as a once necessary prologue to reason. Both hold human beings to be imperfect, either by lack of biological adaptations or by possession of (seemingly⁷¹) biological urges. It is via a sort of pre-reason that Blumenberg believes fundamental myths are produced.

Fundamental myth as a term is a bit misleading, as it refers not to myth in itself, but to the prototypical concept that is built upon more specific iterations of myths; for example, there are different versions of the myth of Prometheus. However, the fundamental myth at hand is that of the creation of fire. Humanity has bio-social concepts that are universally present and mythologized upon across cultures and religions. The reason for using this term instead of some other is two-fold. First, the term “fundamental” implies an innate “building upon” or “expansion of” a reducible concept, which is key to understanding Blumenberg's concept of myth. He makes full use of the developed, diverse, and even anecdotal iterations of myth as important evidence supporting its pre-rational nature. Second, a fundamental myth has little “corrective” recourse—that is, to remove the presence of a myth from a culture, or more specifically from a culture's epistemology, is an impossibility.

Myths arrive in the face of crisis, according to Blumenberg. However, the concept of crisis is also subject to evolution over time. But prior to our exploration of the evolution of this “situation of crisis,” a last point must be made about Blumenberg’s concept of myth. Most essential to our understanding of Blumenberg as a philosopher working on the Cartesian paradigm is the fact that Blumenberg holds the concept of myth to be pre-rational, but at the same time influential to the trajectory of reason after the setting down of myth. We can understand myth as an initial, pre-rational response to crisis—a crisis that is unique to humanity as a species of non-specialized rational organisms (for Blumenberg, our frailness stems from a lack of biological or physiological specializations). He posits that myth-making is a way for cognition to demarcate the unknown as unapproachable or at least unapproachable for now. He refers to this as the setting down of “limit concepts.” He conceives of myth as a means of setting limit concepts around that which is obscure so that one need not invest one’s cognitive energy into the exploration of what is not clear and distinct. Essentially, the obscure was made even more obscure as a semi-rational means of coping with the angst that “the great unknown” might generate.

The function of myth is to keep what is obscure, within the bounds of reason, safely in obscurity, as further pursuit of such things would be futile. In effect, Blumenberg proposes that myth functions as a precursor to identifying what is both not clear and not readily available. It functions as a prelude to reason’s building of knowledge but also as an indicator of areas of non-knowledge—a practice Descartes would have been in support of as he consistently stated that we must pursue only that which is clear and distinct. This second function of myth helps us to understand its creation and cultural permeation as precursory to reason, rather than opposed to reason. Blumenberg finds that as myth wanes in the face of modernity, its function becomes less

procedural to knowledge (procedural meaning “leading us to knowledge”), and more about the expansion of our knowledge (meaning it enhances our understanding about our knowledge). As we move the discussion towards the similarities between the acts of poiesis and myth-making, this point is key. Blumenberg finds modern day reason to be more interested in subjective, internal truths as he believes objective knowledge of the natural world has largely been set down epistemologically. This has led to the idea that myth and myth-making are obsolete epistemological technologies. Obsolescence is a peculiar problem and one unique to humanity. It is even more peculiar to possess an epistemological technology that is obsolete. This strangeness has led to a variety of attitudes about myth.

The obsolete practice of myth requires reconciliation to modern discourse by some means. The “problem” of myth in philosophical discourse is at once apologetic, defensive, and distinctly a salvage mission for what Blumenberg calls preliminary reason. There are philosophers (Bertrand Russell⁷², for example) who understand myth as regrettably feeble first efforts to explain natural phenomena and are quick to encourage rationalism in all aspects of life—as if to apologize for an outburst of juvenile behavior. There are others, like Blumenberg, who understand myth to be a necessary step in the evolution of modern reason, and work to defend the position of myth as pre-rational (more aptly, Pre-Cartesian). At either end of this spectrum of opinion is the fact that myth (in the secularized West) is no longer as it was, due largely in part to the machinations set to work by the Enlightenment and Descartes’ philosophy. For Blumenberg, to address myth as an idiosyncratic “bump in the road to reason” is to do disservice to the human mind. He maintains that if myth ever existed, there must be some valuable function to it beyond a misguided explanatory means of coping with nature.

Blumenberg finds the value to both modern and pre-modern thinkers to be in the practice of naming objects.

Poiesis and Onomathesy as Related Practices

Blumenberg also finds the power to name objects unique to the human capabilities. Citing Walter Benjamin, he establishes (as he does with eschatology in his book *The Legitimacy of the Modern Age*) a connection between Christian cosmogony and Western epistemology. Blumenberg quotes the following passage from Benjamin's *On Language and On the Language of Men* in his discussion of this connection:

With the creative omnipotence of language it [naming] begins, and in the end language as it were assimilates the created, names it. Language is therefore both creative and the finished creation, it is word and name. In God's name it is creative because it is word, and God's word is cognizant because it is name. 'And he saw that it was good'; that is: He had cognized it through name... That means: God made things knowable in their names. Man, however, names them according to knowledge. (323)

This connection between epistemology and Christianity allows for our connection of ancient and medieval lore to the modern era of science. Modernity, for Blumenberg, comes *from* history, not in opposition to or rebellion against it. "The modern age has become the epoch that finally found a name for everything," writes Blumenberg, "What science repeats has already been suggested in myth: the success, achieved once and for all, of acquaintance with everything on all sides. Myth itself tells the story of the origin of the first names from night, from the earth, from chaos" (*WOM*, 38-9).

Onomathesy, or the setting down of names, is key for the modern understanding of mathesis universalis, and arguable to any epistemological system. Simply put, to name something is to know something. The ability to identify objects, whether through ideals or the *a priori*, is to have a primal knowledge of such objects. That primal knowledge leads to exploration and expansion via expression. Once again Blumenberg establishes a direct epistemological connection to myth via onomathesy. He argues that those names and stories established by inculcated myths set a trajectory for the sciences that have since explained away those myths. A very simple example is the Greek myth of Arachne, and the more modernly developed term of arachnid. But his argument seems to assume the practice of onomathesy has ceased in modern times. To clarify, Blumenberg argues is that our modern understanding of myth seems to come pre-packaged with a determinism towards the overcoming of myth. Simply put, myth is a way of putting a pin in the unknown to mark it for later exploration. It was, in the past, a way of knowing the unknown “for now” simply by naming it or giving it a story. Blumenberg argues that this “pre-packaging” is a modern understanding of the concept of myth, and one that no longer exists: “Assumptions about the origins of myth are not without consequences for supposed triumphs over it. Neither are they without consequences for the assessment of the potential for its (wished for or feared) return, as well as for discerning its ways of functioning and modes of reception” (*WOM*, 46). Blumenberg critiques this assumption of “progress” that he claims is romanticized historicism—a way of portraying history as an eventual rise above a stultified past. As the Enlightenment supposed reason to be the antithesis of myth, the historical view of that era portrays reason as the rejection of or an overcoming of myth. Blumenberg finds this portrayal to be spurious: “In this connection they must be clear that the antithesis between myth and reason is a late and a poor invention, because it forgoes seeing the

function of myth, in the overcoming of that archaic unfamiliarity of the world, as itself a rational function, however due for expiration its means may seem after the event” (*WOM*, 48). The difference between the reason of science and the reason of myth is that the former is presumed to become obsolete, and the latter “cannot be made obsolete, however much, in each of its steps forward, it itself makes the preceding steps obsolete” (*WOM*, 50).

Blumenberg’s ideas about onomathesy are helpful in connecting myth and epistemology, and his work reflects upon a somewhat bigger picture of knowledge as human made. As discussed in Chapter 4, I posit poiesis as a means of setting down knowledge beyond the traditional propositional or mathematical means that is typically associated with the Cartesian paradigm. Onomathesy and poiesis share the characteristic of the human mind drawing out its own maps of its existence. Understanding onomathesy and poiesis as related concepts allows for a more accurate view of knowledge as an evolving human-made process. The study and mapping (the meta-mathesis, if you will) of what is involved in the epistemological practices that codify knowledge, we can better expand the grand bank of mathesis universalis.

The naming of objects can be understood as an act of poiesis. It is a setting down of knowledge. As an avenue for future discourse, I would examine the roles that paintings play in the onomathesy of objective knowledge, and by so doing possibly expand our understanding of what onomathesy might entail as a knowledge-making concept. The naming of objects is not, and should not be, limited to the linguistic concept of naming. Myth, the arts, mathematics, language, and perspective are all means to the setting down of knowledge. That is, they are the means of making knowledge knowable. For example, history books and websites nearly always pair texts about Hennig Brand discovering how to make phosphorous with Joseph Wright of Derby’s painting *The Alchemist Discovers Phosphorous*. This is the case despite the fact that the

painting was not intended to be Hennig Brand, nor is the equipment depicted an accurate representation of the process by which he discovered it. But as the frequency of the pairing of the text about phosphorous and Wright's painting increases, and an increasing number of individuals see this pairing, the painting then becomes a part of that piece of knowledge in the grand human consciousness, just as the Mona Lisa has somehow become ubiquitous with the general conception of art history or the term 'art.' Likewise, through work on onomathesy, paired with my Chapter 4 discussion of poiesis, mathesis universalis moves beyond both the need to define the unknown and the need to map the visible world.

As for what Blumenberg understands the modern role of myth to be, he illustrates to us the shift from an outward-exploration characterization of onomathesy towards a reading of "naming" that has moved to introspective explorations. Blumenberg uses Joyce's *Ulysses* as his case study, titling the book as the first truly modern novel. Though other scholars credit Cervantes' *Don Quixote* or Richardson's *Pamela* with the title of first modern novel, we must recall that for Blumenberg the concept of modernity is tied to an inward gaze and the creation of works that require deep reflection and personal interpretation. Blumenberg is in fact stating that Joyce was providing the mind with a lens unto itself as an individual entity, with the full expectation that different minds will interpret the book differently. If this is the case, then we find a kind of full reversal of the "universal" nature of mathesis universalis. Whereas prior to *Ulysses*, novels were aimed at communicating general themes, morals, emotions, etc. that would more or less need little interpretation; for this book, however, there is no expectation that there will be a "universal" response. He states that Joyce understood the significance of the modern need for literature that puzzled cognition with no certain conclusions. Thus, such literature filled the cognitive void opened by modern epistemological and technological advances.

Ulysses as a text is not about story telling per se. It is a book that requires much more than simple comprehension of a narrative or even reflection upon general themes. Blumenberg directly ties Joyce's choice of writing style to modernity:

Ulysses has to be read in a way that responds to expectations of integration and exhaustiveness, and can be read in this way only by born hermeneuts. But in a world in which people are relieved of work by machines, that is such a large group that it is increasingly worthwhile to write only for them and according to the rules of their guild. With Joyce, a literature begins in which even those weaknesses in the classical skills of composing, inventing, constructing, and storytelling have been converted into eminent skill in writing for initiates: an industry of production for and industry of 'reception.' This professional public is prepared for something that, in the history of mankind, has only been accepted under the conditions of cults: for boredom. (*WOM*, 82)

The leisure (or boredom) provided by the perceived completion of the mapping of the visible world results in the obsolescence of the purposive obscurity that myth and myth-making generate. As such, the epistemological urge to "figure out" the world must be sated. As a result, modern fiction has become a means of occupying this urge. I expand Blumenberg's argument to say that rather than constituting a simple occupation of a cognitive means, modern fiction has come to be an epistemic and philosophical force that allows interest groups beyond those traditionally given epistemic or philosophic authority, a means to expand upon mathesis universalis.

Blumenberg's work spells out three important characteristics of knowledge-making practices:

1. They do not need to be and have not always been, rational in nature (as it is not with myth) but that does not mean its non-rational means of knowledge are completely irrational or opposed to reason.
2. They are no longer, due to the evolution of humanity, the same as they once were.
3. They are now inclusive of the mapping of the subjective, interpretive world of the individual.

No longer is myth-making needed as the prelude to reason's exploration of the natural world, so it is now taking on the role of an exercise program for introspection. That introspection has the means to expand *mathesis universalis* by providing a means of mapping subjective and individual responses to the world as it is. Blumenberg credits the greater leisure time provided by the industrial revolution and the Cartesian paradigm as the primary causes of a newer, more internalized and self-made "problem solving" function emerging in humanity. Instead of devoting the majority of epistemic practice to the setting down of knowledge about the natural world, we have focused epistemic efforts towards the understanding of how we as human beings fit and shape our own views of the natural world. The shift from the work *of* myth to the work *on* myth is directly tied to the scientific and subsequent industrial revolutions that are, in Blumenberg's thinking, now permanent fixtures of humanity.

This is not to say that we should detach our interest from the historical build up to the present state of modernity, nor should we dismiss the past lives of myth. "Only an assessment of the risk involved in the human mode of existence makes it possible to discuss and to evaluate functionally the behavior that was serviceable in mastering it, and to take seriously the tentative inclination to be able to avail ourselves of such serviceability again" (*WOM*, 111). Blumenberg's conception of modernity as a progression from antiquity rather than a drastic change, all the

while embracing modern philosophical developments gives validity to our project of developing a Cartesian aesthetic. If we can learn from Blumenberg how to avoid working only “with or against” modernity, it would allow for an understanding of more modern subjects such as aesthetics as a natural step in the development of western epistemology which may in turn help us in any future shifts that might lay ahead. This type of expansion acknowledges that the evolution of humanity (and of the humanities) will necessitate the inclusion of those interest groups that have prior been excluded from epistemological models indebted to the traditional, literal readings of Descartes’ pillars. In the next sections, I will connect the interest groups of aesthetic philosophy, feminism, and fiction (specifically science fiction) as groups all marginalized by traditional views on *mathesis universalis*. These groups are able to enlighten, and in some cases disrupt, the traditional reading of knowledge via their marginalized nature.

Aesthetics, feminism, and science fiction as traditionally marginalized groups

There are a great many interest groups that are able to enlighten and in some cases disrupt the traditional reading of knowledge via their marginalized nature. While each group should be given its due consideration and is frankly owed dissertations of its own, for the purpose of our conversation in this study I will focus on three groups that have a distinctly interconnected discourse with *mathesis universalis*—a discourse that is very much in the public eye today. The interest groups of aesthetic philosophy, feminism, and fiction share a common core in the rationale of their traditional exclusion from the concept of *mathesis universalis*—specifically the concerns and values of these groups were viewed as divorced from the pursuit of objective knowledge. One might even bristle at the idea of calling the facets of intellectual life that they represent as those of “interest groups,” as that term is typically applied to groups of people

actively being oppressed by authorities. Yet that is precisely what happens to groups that do not hold the epistemological clout of other intellectual groups.

There are unique power structures at play in epistemology, and as a result, certain directions of inquiry came to be understood in the West as merely secondary or even purely whimsical. But as Blumenberg informs us above, we have reached a period of cognitive development and epistemological breadth that gives us the leisure and incentives to examine what was formerly considered merely secondary and whimsical. The following pages are to act as a brief introduction to the broader claims of feminism, fiction, and aesthetics, as they critique the “status quo” of *mathesis universalis*. These claims do not intend to negate or reject the Cartesian pillar, though some in the camps discussed would take such a radical stance.

Let us first establish in what ways these three groups are “interest groups.” Through the previous chapters of this dissertation I have shown that aesthetic discourse has been continually understood as distinctly outside the bounds of objective knowledge, but such an understanding is an unnecessary limitation. In Chapter 2 I specifically evaluate works by philosophers working on reconsidering this exclusion. In particular, they aspire to validate aesthetic discourse in face of the grander scientific revolution. This validation is necessary because, since the advent of the Cartesian paradigm and more aptly since the erroneous reading that the pillars are or should be being disconnected from subjective or qualitative concerns, certain types of knowledge have been deemed “more valuable” or more “noble” by the academic and commercial than others. While an entire dissertation could be written on the disparity between types of knowledge, it is sufficient for our needs here to say that the knowledge produced by the “hard sciences” (as they are generally conceived) has a higher value in academia, education, industry, and thus the general cultural consciousness of the West. These three groups are working to establish a voice

and a sense of value for intellectual arenas marginalized by being commonly labeled as “not objective.” The previous five chapters of this text have been dedicated to dissolving the assumption that the Cartesian paradigm (a driving force, perhaps the backbone of the hard sciences as we know them) cannot and does not include aesthetic discourse. Therefore, the focus will be on the two remaining groups of feminism and fiction.

The Feminist Perspective

As feminism is such a far-reaching concept encompassing political movements and ideologies with many different avenues of thought, I will isolate the conversation to the two specific arenas of feminism that are most relevant to the larger discussion of the dissertation: feminist epistemology and the feminist critique of science. Before delving into these arenas, it must be clear that what is at stake with both is the representation, validation, and normalization of the “feminine perspective.” What is meant by this term is not necessarily the feminist perspective, although the two overlap a great deal. Missing from the history books and from philosophic discourse (epistemology specifically) generally are views that can readily be understood as coming from outside the demographic of privileged-white-male. Acknowledging this fact has been a source of expanding academic interests, the professional world, political activity, etc. since the mid-twentieth century. It is my aim with this discussion to specifically expand our ideas of what the Cartesian paradigm means in our current time. As such, it is important to recognize where it has fallen short of its own goals (of universal knowledge) and expand our understanding of epistemology to allow for less rigid views of what does or does not constitute knowledge.

Feminist epistemology can be generally understood as a critique of Western epistemology by three different perspectives: feminism standpoint theory, feminist postmodernism, and feminist empiricism. Each of these perspectives can provide us with a point of departure from which we can examine the pillar of *mathesis universalis*. In the last sections of this chapter I will apply these points to the analysis of two works of literature and a painting that directly address epistemology and the feminine perspective. In brief, standpoint theory maintains that Western epistemology privileges certain social perspectives over others. Despite the disparity, however, there is the view that those in marginalized groups are afforded a less skewed perspective on objective truth because they are not invested in maintaining an existing privileged status quo.⁷³ It should be clear that the “standpoint” of standpoint theory is not necessarily about someone’s biases or subjective views, but is more about the power structures at play for a specific social group. This particular perspective on feminist epistemology reveals the problematic notion of what we can refer to as “motivation bias.” The basic argument stands that those not working towards the specific goal of maintaining a political status quo are less vulnerable to certain biases that would shape their conclusions. Simply put, these groups (namely women) had little concern as to the consequences of truth upon the status quo, because the status quo did not privilege their cause. Ergo, they are able to more clearly perceive the truth. While I agree that the motivation bias is certainly a factor to consider of any group, to state that a less privileged group is free or less prone towards motivational bias is not a completely logical proposition, as motivation bias is not necessarily restricted towards the maintenance of the status quo. In fact, with certain radicalized groups, there is a distinct motivational bias to disrupt the status quo, which in turn could shape one’s epistemic views. What this theory does offer us,

however, is the idea that seeking and creating knowledge are not purely “noble” pursuits—that is, they are not free from political or social motivations and consequences.

Feminist postmodernism views epistemology as purely constructed and denies the existence of truly “objective” knowledge. What is more is that those in this camp rally for a kind of perspectival relativism, citing that the perspectives of all social groups have epistemic validity and that no one specific social group should possess total epistemic authority. A complete rejection of objective knowledge is a radical stance that is difficult to accept when the pursuits of science, a field dependent upon the idea of objective knowledge, have been so fruitful. However, what we can take from feminist postmodernism is the idea that the label of “objective” is much more difficult to legitimately affix to knowledge than is often acknowledged.

Perspectival pluralism seems a more fitting term than perspectival relativism. The term pluralism implies a coexistence of truths, whereas the term relativism implies that there are no absolutes, granting no party finality or authority. The term pluralism by its definition implies a coexistence of truths. The two are not mutually contradictory, but in the case of epistemology a dismissal of finality runs the risk of epistemic entropy. The depths to which one could follow these nuances would require entire dissertations dedicated to do them justice. For now, it is sufficient to say we should understand *mathesis universalis* as a concept in which authority and finality are circumstantially connected. Operationally, this is what the Cartesian paradigm was after—a setting down of knowledge until it otherwise needed moving.

Feminist empiricism is less a critique of knowledge than a movement towards the expansion of knowledge to include feminist theory. It focuses on combining the main ideas of feminism and observational studies to prove feminist theories through evidence. While this perspective is most in line with my own in this dissertation, there are several rhetorical problems

that can hinder feminist empiricism as an epistemological practice. Two in particular are worth mentioning in this discussion: the paradox of bias and of social construction. The paradox of bias can be understood as the tendency to instill one bias while working to remove another, particularly in the case of power struggles. In the case of feminism, while working to expose and remove androcentric or sexist ideologies from epistemology, one could easily adopt certain feminine biases about gender and science. The paradox of social construction works in a similar fashion. While criticizing science and epistemology for their inherent tendencies, the political and social constructs of feminism might be instilled, thus still leading to biased epistemology. To avoid these paradoxes those working in feminist epistemology are not generally out to establish their own conception of knowledge or science. Rather, they work to balance the proverbial scales.

Feminist empiricism focuses on reforming two major types of epistemic inequity: testimonial and hermeneutical injustice. Testimonial injustice is the idea that a speaker's credibility can be deflated by class, status, gender, etc. Hermeneutical injustice is the idea that a speaker's knowledge or understanding of a matter is conceivably lacking owing to a disadvantaged education or access to resources. As an example, marital rape may not be understood as such by the victim, or also the victimizer, if neither understands that such a specific concept of rape exists, or that such an assault is socially unacceptable. Feminist empiricism is largely criticized for the assumption that one's perspective might ever transcend social or historical determinations—meaning that in many ways the cultural dye has been cast and course corrections are difficult and already subject to their own pre-established trajectories. Despite these criticisms, feminist empiricism aims to keep one's skepticism, credulity, and interpretations (of testimony and experiences) free, or as free as possible, from gendered bias.

Throughout all three perspectives, a common critical point can be made related to the concept of positivism. Positivism can have many nuanced meanings, but generally conceived, it is the combined idea that scientific methodologies will provide clear and distinct knowledge, and that science maintains a kind of authority over all knowledge. Since the inception of this idea with Plato, positivism has been viewed as a kind of battle between science and the humanities.⁷⁴ His argument was that science allows for the verification of knowledge, and that all “authentic” knowledge assumes the authority of the sciences. In the Enlightenment era however, the idea of positivism has been expanded by Auguste Comte (1798-1857) to include the social sciences and humanities as secondary branches of the sciences. Very briefly, Comte conceived the hard sciences as *foundational to*, rather than opposed to, the social sciences and humanities⁷⁵—an idea not unrelated to Descartes’ tree of knowledge referenced in Chapter 1. However, many interest groups, such as feminists, find Comte’s (as well as Descartes’) reductionist methodologies to only boil all human activity down to physical, biological, or chemical happenstances, leaving knowledge impoverished by a lack of meaning or significance to human events.

While entire books have been dedicated to the exploration of how positivism can be seen as an oppressive force to many groups beyond women, a quick summary of the basic points of feminist criticism of science enlightens this conversation by clarifying the five major feminist points of critique aimed directly at positivistic science, and thus at the major epistemological force in the West today:

1. The marginalization of women scientists impairs scientific progress
2. The accepted social applications of science and technology disadvantage women and other vulnerable groups and treat their interests as less important

3. Science has ignored women and gender to such a state that revisions of accepted theories may be warranted
4. The limiting, partial, or incomplete perspectives of men can lead to errors of omission or unjustified conclusions owing to their solely masculine nature
5. Research into sex differences that reinforces sex stereotypes and sexist practices fail to live up to standards of good science.⁷⁶

The second, third, and fourth of these criticisms are most important to the last sections of this chapter, but for now it is sufficient to establish that there are distinct pitfalls in an epistemological reliance on positivism. Though the original conceptions of *mathesis universalis* have relied heavily on positivism, there must be room for the expansion of other views on knowledge in *mathesis universalis*. Feminism has produced some of the well-developed arguments against a traditional understanding of knowledge—arguments that have clear connections with the realms of aesthetics and the arts.

The overall goal pursued in our previous chapters—enlarging the conceptual boundaries of the Cartesian paradigm to include aesthetic discourse—is consonant with that pursued by those working with feminist themes and ideologies. The two interest groups of aesthetics and feminism should be seen as parallel forces working to solve a similar problem. Aesthetics and feminism both work via different means to “correct the course” of traditional epistemology that has been upheld by literal understandings of the Cartesian paradigm. However, if we are to look beyond knowledge itself, we must look to those who make and use knowledge, and most importantly, those who have the authority to determine knowledge as such. Though the responses to traditional Cartesian epistemology may vary across different eras, fields of study, or even schools of thought on a particular matter like feminism, one unifying inequity exists: that

epistemic authority has been solely represented by and for the perspective of the privileged white male. Post-colonialism, Marxism, Feminism and others have taken umbrage with the lack of non-white, non-wealthy, and non-male representation in the sciences. This inequity might at first glance appear to be a problem of statistical representation. If one were to look into most history books it is standard to surmise that women philosophers, particularly prior to the twentieth century, were few and far between. Female artists, historically, suffer the same paucity of representation. However, the representation of women scholars is indeed a large piece of this inequity. The logical conclusion feminists make about this lack of representation is that the epistemological powers that be either purposefully left out women scholars from history, or determined that their works were less noteworthy than their male counterparts.

Aside from the gender disparity, the feminine perspective (the fourth of the above listed criticisms of science), in most feminists' view, is distinctly absent from the scholarly fields.⁷⁷ In discussing this disparity, it is worth mentioning that Descartes was one of the few philosophers to actively work with women as philosophers—a rare professional practice for his time. This is not to say that Descartes should be seen, necessarily, as a hero of the feminist cause by his inclusion of women as his colleagues. The women were in fact royalty (Princess Elisabeth of Bohemia and, for a brief time, Queen Christina of Sweden), and their own works have, until recently, been largely swept aside by the academic community as “novice” dabbling into philosophy. But in taking the operational approach to his work, Descartes' actual practices, his epistolary records, etc. into his overall philosophy, show that Descartes held no overt aversions to the idea of women as thinkers.⁷⁸

Hilde Hein and Carolyn Korsmeyer's essay “Pleasure: Reflections on Aesthetics and Feminism” (1993) provides many examples of how the two separate philosophical groups of

aesthetics and feminism are connected by their need to assert their views in the face of rationality, objectivity, and “universal knowledge.” The first obstacle that both groups face is the stigma that emotion traditionally evokes amid philosophical discourse. As far back as Socrates, emotion was a force to be curtailed. Most notably, artistic expression was a threat to be avoided as it made people emotional and “womanish.” However, in more recent years there has been a rising interest in emotion, which Hein and Korsmeyer find to be favorable to both the feminist and aesthetic causes:

This new attention to emotion can be found in moral theory, epistemology, philosophy of mind, and philosophy of science, as well as aesthetics. Moreover many of these analyses are devoted to refuting the bad reputation emotions have had since antiquity and to arguing for their cognitive, moral, and aesthetic value. In this aspect of their work, the vindicators of emotion are in stride with feminist critiques of the way the concept of reason operates in traditional philosophical discourse. (200)

Hein and Korsmeyer characterize rationality as a perceptibly masculine by way of its opposition to typically feminized emotion.

Classically (and medievally and modernly) the powers of the rational mind are conceived as the highest achievement of man. There is some generic connotation to this claim (for rationality distinguishes men from beasts), but also a good dose of the specific, for rationality fully achieved is usually cast as a preeminently masculine accomplishment. ((P 200)

To build upon Hein and Korsmeyer’s comparison of aesthetics and feminism as two philosophical branches similarly pitted against rationalism, we can make more specific

references to the Cartesian paradigm. The claim of epistemological “universalism” that Descartes makes the pillar of *mathesis universalis* is suspect when one considers the lack of attention to aesthetics and feminist perspectives. As the overall goal of this dissertation was to show means by which the Cartesian paradigm readily connects with aesthetic discourse, and thus proving the unnecessary exclusion of aesthetic knowledge from *mathesis universalis*, we hope to open windows of discourse for other traditionally excluded disciplines. Many feminist critiques of the sciences attack aspects of the Cartesian paradigm that are non-representative of the “operational” spirit that can be surmised in the previous chapters. But one can critique the Cartesian paradigm while still preserving its overall goals and functions. As discussed in Chapters 1 and 4, we find that the four pillars of the Cartesian paradigm do not necessarily preclude aesthetic discourse. Chapter 4 in particular shows how the “human-making” of knowledge allows for aesthetics and the arts to maintain a copacetic relationship with Descartes’ original vision for *mathesis universalis*. The cause of feminism might also be “introduced” to the Cartesian paradigm in such a way. If one understands certain types of knowledge as the result of the subjective act of “setting down” (*poiesis*), then considerations of the nature of who is setting the knowledge down easily dovetails into the conversation.

This dissertation holds a special interest in the traditional exclusion of aesthetics from the Cartesian paradigm. The related topic of pleasure has yet to be discussed in detail and is a relevant concept to both aesthetics and feminism. A comparison of the commonalities concerning pleasure between the two disciplines is warranted, though for the purposes of this dissertation the outline must remain cursory. Hein and Korsmeyer’s essay generally addresses the concept of pleasure more than epistemology, but their argument that the two disciplines have been similarly suppressed in favor of rationalism brushes the edges of epistemological concerns

as well. Their argument, situated in psychoanalytic thought, is that the modern contextualist stance on knowledge and philosophy requires broader pluralism—meaning that if we are to take into account the specific contexts of knowledge as it is made (set down), then we need to broaden what “context” refers to. If this broadening of context is accomplished, then a reconsideration of what “good taste” embodies would also be necessary. As the concept of good taste is a central concern of aesthetic philosophy, Hein and Korsmeyer find that “Feminism is in stride with the recent contextualist orientation of philosophy of art, for example, in which cultural facility in apprehending art is emphasized a part of learning to discover artistic properties [that would inform as good taste]” (202).

Velasquez’s Feminist Critique of the Nobility of Knowledge

My overview on the topic of feminist epistemology, feminist criticisms of science, and of the confluence of interest that aesthetics and feminism share, all serve to contextualize the case-study I present in these next sections. First, I will work through an analysis of a painting by Diego Velasquez that reveals some awareness, if not direct understanding of, the inherent imbalances of gendered epistemological practices. Second, I will discuss the works of two modern authors and their perspectives concerning the feminist views on gendered motivations underlying Cartesian epistemological practices. The phrase *gendered epistemological practice* refers to the idea that the ways in which knowledge is established, codified, exchanged, etc., are steeped in gender specific characteristics that are upheld by cultural norms. We are again reminded by Hein and Korsmeyer that our purpose for inquiring into gendered perspectives is to work on an expansion of, rather than a rejection of, *mathesis universalis* and the various structures at play in that pillar: “To assume a female perspective—to look at the world from a

woman-centered position—is not necessarily to declare allegiance to essentialism or to separatism, but rather to describe the world as it is encountered: gendered and patriarchal” (204).

The three thinkers I will discuss in this section have all broached inquiries about gendered epistemology. They have called into question (by various means) the effects of gender roles and the associations of gender with certain behaviors and activities in ways that directly tie to epistemology. Two of the three, the authors Ursula K. Le Guin and Neil Gaiman, have more directly investigated this question of gendered epistemic practice via critique of science—the most prevalent epistemological practice of our time. The painter Diego Velasquez makes an intuitive commentary on the gendering of knowledge. I use the term intuitive to indicate that as he was not presented directly with the ideas of feminism, gender, or epistemic practice as those terms were not yet developed as philosophical ideas during his lifetime. I will argue that Velasquez, as an artist-thinker, took notice of a particular phenomenon attached to the gendering of knowledge and portrayed it as such, though the work in question has been largely described by arts historians and hermeneuts alike as a simple genre scene. More broadly, Velasquez takes note of the seemingly ungendered idea of *mathesis universalis* as a distinctly gendered epistemological practice. Velasquez, and the later discussed Le Guin and Gaiman, all take note of the roles gender can play in epistemic practices. What these three creative thinkers hold in common with their respective works is attention given (by visual observation, literary thought experiment, or poetic speculation on social development) to the idea that privileged white males have had the rights to determine what the “proper arenas” for knowledge are and likewise what constitutes the proper motivations for the making of knowledge. All three thinkers acknowledge by some means that people of marginalized groups (women, in this case study) might have a perspective on the making of knowledge that differs from what has been traditionally established

and maintained. As mentioned in Chapter 1, Descartes sought to establish decorum for scientific inquiry. What he likely did not consider while doing so is that his race, class, and gender would have such a significant impact as a normative function on that which constitutes what is proper to *mathesis universalis*.

Diego Rodriguez de Silva y Velasquez (1599-1660) was a painter known for his philosophic use of gaze lines and placement of figures. Painting during the Spanish Baroque period, Velasquez's interests were consonant with that of the times. He painted with a highly individualistic style, incorporating the themes common to the Baroque period, though they found unique representation by his hand. Michel Foucault's analysis of Velasquez's masterpiece *Las Meninas* in *The Order of Things* (1966) provides evidence that the artist was a thinker. Foucault understands Velasquez to be representing visually the classic episteme—in short, Velasquez shows how representation was the ordering (epistemic) force of that time. His use of many figures in the painting reveal the artist to have an epistemic power, as he orchestrates and sorts through the chaos of the scene at hand.⁷⁹ The viability of Foucault's claims about the painting have been debated and expanded upon since his commentary's original publication. Foucault's deep analysis reveals that Velasquez was possessed of philosophical interest in epistemological practices and, more importantly, interest in the roles of those outside normative power structures in epistemological practices. In painting the scene as he did (including so many of the “background” figures of life in the works, and representing the power structures via the metaphor



An Old Woman Cooking Eggs

Diego Velasquez

C. 1618

Oil on Canvas

100.5cm x 119.5cm

National Gallery of Scotland, Edinburgh

https://en.wikipedia.org/wiki/Old_Woman_Frying_Eggs

of gaze, etc.), Velasquez made it clear that during the Classic episteme, the role of ordering was essential and this role, more often than not then, fell to those skilled in representation (visual artists).

Bearing Foucault's work on *Las Meninas* in mind, we now turn our attention to a much earlier pair of paintings by Velasquez: *An Old Woman Cooking Eggs* (*Cooking Eggs*) and *Christ*

in the House of Martha and Mary (Martha and Mary) While *Las Meninas*, or at least Foucault's reading of it, has epistemic importance as a visual representation of power structures as they relate to knowledge, these earlier paintings by Velasquez shed light on the gendered epistemological practices of his time—practices that in our modern era have become an area of



Christ in the House of Martha and Mary

Diego Velasquez

1618

Oil on canvas

63cm x 103.5cm

National Gallery, London

[https://en.wikipedia.org/wiki/Christ_in_the_House_of_Martha_and_Mary_\(Vel%C3%A1zquez\)](https://en.wikipedia.org/wiki/Christ_in_the_House_of_Martha_and_Mary_(Vel%C3%A1zquez))

great interest.

The most notable visual aspect of both works is the absence of a precise fixation point for either figure's gaze. It is unclear upon first impressions if the figures are gazing out at the viewer, at each other, or at objects in the room. The lack of focused gaze has a deliberately unsettling

effect—it disorients the viewer as to the nature of the scene at hand. As an artist, Velasquez is known for deliberately directing his subject's gaze to impart meaning to the viewer, so it is not without reason that one can assume that the ambiguous gaze has significance as well. The woman in *Cooking Eggs* looks beyond the boy to her right, but unto what is not discernable. Her stare is vacant and untethered to any visible object or interlocutor. The boy also has no clear object of interest. He could be looking at the food being cooked, or at the objects on the table. He is clearly, however, not entirely or solely engaged with the woman as his comportment is uncomfortable, perhaps slightly embarrassed as if he had recently been rebuked. The young maid of *Martha and Mary* also seems unsettled or upset by the old woman's presence.

These works are referred to as a *bodegons*—a kind of blend of still life and genre painting. Velasquez, early in his career, explored the potential of these types of works, likely in response to the recently developed Baroque affection (in Spain in particular) for the *picaresque* novel. The Baroque era held a distinctly pessimistic flavor in response to the perceived failure of Renaissance ideals—stoicism, escapism, satire, and a distinct sense of futility against the passage of time were the common themes of the arts. This led to the emergence of the picaresque novel—one of the birth places of the anti-hero. These novels feature realism, an esteem for lower-class characters who make it by their wits, and a distinct un-vanitizing of morality. Miguel de Cervantes' masterpiece, *Don Quixote* crystalizes the aesthetic mood of the Baroque, and the anonymously published *Lazarillo de Tormes* is the archetypal picaresque novel. Both authors found ways of creating troubled heroes, although the source of those troubles differ greatly in their symbolic meanings⁸⁰. The bodegon paintings of Velasquez embody some of these same tropes. Though simply dubbed as “pantry scenes” that demonstrate his interest in the everyday,

Velasquez appears to have used the symbolism or significance of the figures at hand to bolster his visual discourse.

Women, the elderly, children, and people of color (*The Kitchen Maid*, formerly known as *The Mulatto*, shows a black maid at work in the kitchen) all feature in Velasquez's bodegons. The "everyday" aspect of the pair of paintings is readily apparent as there are no opulent or decadent objects present. While *Martha and Mary* has the more obvious allusions to morality with the inclusion of the figure of Christ (it is unclear if the scene is a painting within the painting or a hatch window through which we see the scene in the next room), *Cooking Eggs* has little high moral posturing of the figures at hand nor of an obvious notable metaphor.

The ambiguity of the scene in *Cooking Eggs* is of particular interest to our discussion of gendered epistemological practices. A part of epistemological practice is the determination of what types of knowledge are more desirable than others. As such there is typically an authoritative group or principle that one aligns one's inquiries to. Historically, the authoritative group has been privileged white males, but since Descartes' paradigm was introduced in the West, it has been displaced by the guiding principle of objectivity or that which is clear and distinct. Velasquez's paintings can be understood as windows into what has been marginalized, not just on a social scale, but on an epistemological scale also. To clarify this point, while conducting my research about *Cooking Eggs*, a most poignant piece of trivia that appears in the search results is a notation about how the official name has had a suggested change from *An Old Woman Frying Eggs*, to an *Old Woman Cooking Eggs*. The change came about because there were objections as to whether the woman depicted is indeed frying or if she is boiling or poaching the eggs. This seems unimportant at first. However, I find it most noteworthy. The process of cooking eggs, a pedestrian enough undertaking, portrayed in a manner mysterious

enough to be unclear to the artist or unclearly read by the viewer—enough so to re-catalogue an art piece’s title— reveals a very telling void of knowledge. To clarify the significance of this, if we assume that the method used for cooking the eggs, for example, is unclearly described by the artist for the modern viewer, this indicates one of two things: the image given is vague or misrepresented by the artist’s rendering of the scene or the technique at hand is one lost to modernity, and therefore is not readily identifiable. In either case, we find a lack of comprehension and therefore a lack of attention is given to pedestrian domestic knowledge—a type of knowledge that has historically been gendered as female.

If the first case is true, the strangeness of the scene is the sort of naïve representation of the objects at hand. Perhaps Velasquez did not understand the processes, objects, etc. of a working kitchen well enough to accurately render the scene. The painting is an awkward visual description of tools and practices of cooking—a representation done by someone who apparently does not cook, nor spends time watching someone cook. As Velasquez has been reputed to be very clever with his portrayal of order vs. chaos in later paintings, it is even possible to imagine that he purposefully left the cooking process vague for the sake of the feeling of unsureness and curiosity of the viewer—a reminder to privileged viewers that they are an outsider looking in on practices and everyday occurrences that are foreign to their knowledge. If so, Velasquez has shown that there are realms of knowledge that are outside the interest of an educated man. If the second assumption is true, then it can be understood that the process shown in *Cooking Eggs* was never properly documented or “categorized” by men of science for the annals of history. Simply put, domestic work was deemed unworthy for an educated and inquiring man’s attention as “proper knowledge” and therefore omitted from *mathesis universalis*. This might seem an exaggerated stance but the theme of what has traditionally been understood as “women’s work”

has arisen in several works of our modern era (the themes of domesticity, motherhood, caretaking, etc. abound in feminist art works), making it most noteworthy when a thinker so early on as Velasquez also takes interest.

The scene *Cooking Eggs*, similar to Foucault's reading of *Las Meninas*, has significant visual discourse in terms of epistemological practice and gender. If Foucault is correct about his reading of *Las Meninas* then it can be assumed that Velasquez was aware and interested in the epistemological practices of his time, even if that awareness was intuitive in nature. It would also follow that other paintings by Velasquez might also address epistemology by other means. The visual development of *Cooking Eggs* is above and beyond that of Velasquez's other bodegons, and as such, viewers must inquire as to what about this scene warranted his extra time and attention. Velasquez developed this painting as a visual commentary about those groups outside the epistemological "norm" of the privileged male. His painting has stumbled upon the "laboratory" of those marginalized by science, and has made subtle indications that you as the viewer are witnessing "others" to the privileged white male. The respective ages of the figures are the first and most apparent layer of marginalization. The boy is young enough to not be a man, and is therefore somewhat feminized by his age. The woman's elderly age would indicate a frailness that also recalls to mind the frailness so often associated with femininity. That the pair are engaged in practical, domestic activity further separates them from the men of means who would have been practitioners of science (and therefore epistemology) during this era.

What is more, Velasquez shows an alternative type of knowledge to that of the hard sciences. It is a knowledge of practical matters, related to survival and the necessity of domestic practice. This marks the knowledge at hand as feminine in nature, as the gendered practices of life have typically been feminized in the West. The hard sciences and epistemological practices,

as they are generally conceived, are aimed at knowledge beyond what is necessary for survival. *Mathesis universalis* holds the purpose of establishing knowledge for the purpose of codifying that knowledge. It serves to map the world. Such mapping is not an immediate necessity, and during the sixteenth and seventeenth centuries, was the practice of men wealthy enough to afford the out-sourcing of their domestic needs. As such, practical and domestic knowledge was outside the scope of their interest. Velasquez has spotted the novelty of the scene at hand, and understood that the novelty was only specific to the privileged male gaze. The effect of this scene is a small acknowledgement that there are others beyond the world of scholarly pursuits, and those others are possessed of epistemological practices that may be called extra-Cartesian in nature.

Diego Velasquez, with his bodegon paintings, provided visual allusions to the epistemological practices of others outside the demographic of educated, wealthy men—in this case, the others are women specifically, which ties the visual discourse of *Cooking Eggs* and *Martha and Mary* directly to our above conversation about feminist epistemology. The paintings provide the viewer with at least an instinctual, if not fully conscious, awareness of those realms of knowledge that have until recently been outside the academic or scholarly norm. Feminists argue that, epistemically, feminine perspectives have been excluded from grander scientific epistemic practices. Velasquez's paintings confront the modern viewer about this exclusion with scenes of epistemic others, though these others are “hidden” in genre scenes.

As Velasquez's bodegons predate Descartes' philosophical works by several years, we would have to understand this reading of the paintings as a prescient nod by the artist (similar to Foucault's readings of *Las Meninas*) as to the “way of things.” If we set the specific chronology aside, we have a general statement about the way of society that certainly carried on well after

Descartes' lifetime—indeed well after Wright's. What the general statement indicates is that either Descartes, or more likely, those with the authority to establish Descartes' idea of *mathesis universalis* as a means of creating objective truths, would have had some conscious awareness that they were excluding the epistemic practices of others by codifying their own. If that is the case, the exclusion could be seen as an attempt to maintain a status quo of their own epistemic practices.

Those who pursued science in their daily lives (nearly all people that have been installed into traditional scientific/epistemic history were of the singular demographic of privileged white male) found in Descartes a codified means of avoiding misleading assumptions, biases, etc. His methodologies allowed for a setting aside of certain subjective differences so that the work of science might carry on unhindered by unnecessary disputes that such differences may cause. However, the Cartesian “release” of objective knowledge from bias has limitations in its original form. The limitations of his initial vision for *mathesis universalis* end at the biases of sensation, religion, language, and nationality. The mathematicalized nature of his methodology circumvents these biases, but does little to aid the biases set forth by gender, race, class, or age. Simply put, his methods were aimed at uniting different groups of wealthy white males only. It is entirely believable that these shortcomings are due to the circumstance of his lifetime, however, as we have discussed above, we in our modern era have reached the moment when we must expand the boundaries of the traditional understanding of knowledge. Velasquez's *Cooking Eggs* serves, if nothing else, as a moment, prior to our modern time, when that boundary line was crossed—a peek over the edge of an educated male's purview. *Cooking Eggs* shows the work of nourishment, sustenance, and survival as the work of the feminized other from the gaze of an

educated seventeenth century male. In the next sections we encounter two authors who approach these same types of work from the vantage point of the post-Cartesian feminist.

Fiction as a Marginalized Epistemological Practice

The paintings by Diego Velasquez have value in revealing these sources of knowledge that have been traditionally excluded as “extra-Cartesian.” While the discussion of Velasquez offers insight into the philosophical stances on knowledge contemporary to Descartes, the question arises as to how those stances are reflected (and perpetuated) in matters contemporaneous with our own times. Today, the major source of Epistemology in the West is scientific research, a system of rules, methods, and laws that can be directly traced to the Cartesian paradigm (see Chapter 1). Science as a source of knowledge is so enfolded into Western philosophy that it has developed a corollary genre of fiction. It is standard practice to end one’s dissertation with ideas for further research. As we have discussed in this last chapter how *mathesis universalis* may be expanded by including epistemological practices that are inclusive of aesthetic and feminist philosophy, a possible avenue to further expand *mathesis universalis* lies in the genre of science fiction. Science fiction, while traditionally understood as a literary category, has branched out to encompass film and television, crossing the bounds of pure literature into the visual and theatrical arts. As a genre, it is explicitly in dialogue with the moral, ethical, and political concerns that are connected to science as an epistemic and technological force. In these last sections, I examine the works of two contemporary authors – Ursula K. Le Guin and Neil Gaiman – both of whom are working with feminist themes that reveal more layers of “extra-Cartesian” epistemological practice: foundational assumptions about the people that

make and use science. This discussion may indeed warrant larger texts of their own someday, but for the purposes of concluding this dissertation I will keep these closing ideas brief.

When discussing marginalized groups, typically one's mind goes to those socially or politically marginalized—the specifics of race, gender, religion, sexual orientation, etc. are terms that inevitably arise. It might seem odd, then, to consider authors who write fiction to be a marginalized group. But when discussing epistemology, particularly in relationship to the sciences, that is precisely the case. The particular art form of fiction is by its definition a story or narrative that has been completely, and often theatrically, fabricated. As such, it is an intellectual pursuit that, while few would dispute has cultural value, is a dubious source of knowledge. Science fiction is a valuable epistemological practice that reveals via thought experiments the possible shortcomings of scientific optimism. Blumenberg showed us in the first sections of this chapter that fictional literature is a valuable epistemic tool as it allows for more internal and subjective truths to be made clear. Two factors, however, denote science fiction as a valuable resource for revelatory knowledge:

1. Blumenberg's aforementioned ideas of modern fiction being a source of introspective knowledge (see above discussion of Blumenberg's reading of *Ulysses*).
2. The advent of the genre of science fiction in the mid-twentieth century has created a unique philosophical footprint in Western epistemology as it deals primarily with moral and ethical matters that pertain to aspects of science (our greatest contemporary source of knowledge).

As such, science fiction has traversed the bounds of cultural significance to epistemological importance.

It is difficult to support claims that a completely fabricated tale is epistemologically valuable. But recalling James M. Thompson's work discussed in Chapter 4 on the knowledge to be gained from paintings, similar views to fiction can be applied, as fiction has the potential to generate revelatory knowledge. It is an art form that often reveals more plainly what is at stake in the real world, precisely because it is removed from the real world. Fiction reveals presuppositions of the norm or of reality as we the reader expect it to be when they are disrupted by some means. It is counterfactual, as J.O. Urmson says in his essay "Fiction." Urmson summarizes the bias of presupposition that we nearly always enter the reading of fiction with:

If the story begins with the words "Tom was a middle-aged man from Columbus, Ohio," we may assume that he is visible to other men, needs food and drink, speaks English, and so on, unless we are explicitly warned to the contrary.

Without some such presuppositions as these the story will be unintelligible. Even in the most fanciful fairy stories and science-fiction we, in general, presuppose things to be as they really are except where it is clearly shown or stated to be otherwise. Thus the presupposed is in general the truth, though in certain genres the truth is partially replaced or supplemented by conventional falsehoods; in Wodehouse's novels, for example, it is presupposed that all rich young aristocrats are moronic unless we are explicitly warned of an exception. (153-4)

As a specific genre of fiction, science fiction so very often disrupts the very common presupposition that science is inherently good or typically leads to good things—known as scientific optimism. In Isaac Asimov's *Foundation Series*, for example, the presupposition of technology (robotics in particular) as good or for the good of humanity is disrupted when technology surpasses human control. Author Phillip K. Dick disrupts the presupposition of what

sentience entails with his many novels that describe human creatures that are entirely fabricated by technology. Science fiction writers (both of literature and of film) practice philosophy in ways that, today, matter most in the larger consciousness. It is one of the most significant means by which the West currently engages in philosophical discourse. Most typically in science fiction the discourse is speculative—one finds a certain piece of technology or ideology to be purified and then radicalized to reveal a flaw in scientific optimism. Two particular science fiction authors have made “experiments” that reveal two “extra-Cartesian” aspects to epistemology that are relevant to feminist epistemology. While other types of science fiction are also philosophically oriented, I will keep our discussion germane to science fiction writing about feminist themes that are less speculative and more directly engaged with the Cartesian paradigm.⁸¹

Ursula K. Le Guin

Author Ursula K. Le Guin, in an interview with *Vice Magazine*, gave a definition of science fiction that provides our first insights into how the genre directly addresses concerns of the Cartesian paradigm in the real world. Le Guin reveals that we, today, are actively expanding *mathesis universalis* through the counterfactual experiments of science fiction and that what follows these experiments allows the highlighting of salient features of our experience that are normatively occluded or marginalized.

Science fiction—and the correct shortcut is “sf”—uses actual scientific facts or theories for the source ideas or framework of the story. It has some scientific content, however speculative. If it breaks a law of physics, it knows it’s doing so and follows up the consequences. If it invents a society of aliens, it does so with

some respect for and knowledge of the social sciences and what you might call social probabilities. And some of it is literarily self-aware enough to treat its metaphors as metaphors.

Le Guin's statement reveals two extra-Cartesian epistemological practices:

1. Thought experiments geared towards the bypassing of the natural world—a concern never broached in Descartes' writings.
2. Thought experiments that bypass societal foundations that may or may not have repercussions on the decorum of science.

As our discussion will primarily focus on the second type of “extra-Cartesian” concept, I will eschew a deep discussion of the first type save to mention that its concerns are squarely outside the scope of Descartes' original vision for *mathesis universalis*.⁸² The second type of thought experiment that Le Guin mentions, wherein the author bypasses a perceived foundation of society, introduces to us a much deeper connection between science fiction and the above discussion of feminist epistemology as a means of expanding *mathesis universalis*. In particular, Le Guin's *The Left Hand of Darkness* shows us that mannerisms, decorum, and customs surrounding gender and sexuality are not necessarily natural or “scientific” facts. To what degree such imaginings might be used is difficult to say, but her idea that gender and sexuality need not be as they are for a human like society to thrive is a formidable comment upon foundations of “science” that might otherwise have been unexamined.

There exists “extra-Cartesian” characteristics to *mathesis universalis* that Descartes himself did not recognize. We in our modern era are able to develop and are actively developing these characteristics despite a perceived “dismissal” of the Cartesian paradigm since the advent of postmodernism. We have discussed feminism as one such “extra-Cartesian” interest group and

have briefly sketched the three major stances taken on feminist epistemology. All three challenge one or more of the underlying assumptions about knowledge and knowledge-making, making subtle criticisms about how the world of science thus far has been governed by gendered epistemic practices.

It must be made clear that as modern authors, Le Guin and Gaiman both live in the post-Cartesian West, and as such are deeply entrenched in an “episteme”—to use Foucault’s word—that has been building a grand bank of knowledge for four centuries since Descartes’ inception of *mathesis universalis*. They inhabit moments of history when the bounds of *mathesis universalis* (and other philosophical foundations) were being expanded beyond their traditional or original meanings. Both Le Guin and Gaiman are inclined to comment on science as an epistemic practice, rather than to extrapolate upon the effects and consequences of any singular aspect or innovation of science (such as artificial intelligence or space exploration). Le Guin’s thought experiments about the foundational aspects of gender and sexuality as socially-upheld reveal “extra-Cartesian” assumptions about the thinking human being.

Le Guin (1929-2018) is heralded as one the foremost feminist science fiction authors of the last century. Her writing approached the genre atypically, without hyperbolized speculation upon technology, but instead with what she referred to as “thought experiments” about the nature of human societies. Her most well-known works, *The Hainish Cycle*—comprised of three novels *The Left Hand of Darkness* (1969), *The Dispossessed* (1974), and *The Telling* (2000)—is a series that explores possibilities for different foundational facts to social structures. These foundational facts are aspects of human existence that have been largely understood as biologically or psychologically necessary to the composition of a human being. More simply, they are essential aspects of a human being such as breathing oxygen, needing water and nutrients, and so on. *The*

Left Hand of Darkness (*Left Hand*) is the most widely read of the three books, and as the foundational fact at hand in this novel is gender and sex, it is the best to bring into our discussion of feminist epistemology.

To give a brief synopsis, *Left Hand* is a novel following an Earth human, Genly Ai, on an exploratory mission on Gethen—a planet inhabited by two kingdoms of human-like beings that are largely at a détente. The Gethenians are androgynous, displaying gendered sexual characteristics only during their monthly 3-day sexual cycle called kemmering. They have few social rules or expectations around kemmering, and the role of child-rearing is shared by all in the society. As such the social interactions between adults differ greatly from our own. Sexual prowess, gendered power, and segregation of the sexes is non-existent, creating difficulties for the earthling protagonist. His difficulties are made apparent by his own up-bringing in deeply gendered and sexualized customs. *Left Hand* may be read as a thought experiment upon what human life might be like when the supposed foundations of sexuality and gender—two concepts that are considered by many to be “of nature” rather than of social construction—are disrupted as on-going social schemas and are reduced to genderless, purely-biological construct. Le Guin, twenty-one years prior to Judith Butler’s groundbreaking text *Gender Trouble* (1990), created a counterfactual trope wherein one might process the significance of gender and sexuality to our epistemological practices. As with Wright of Derby’s Science Paintings, Le Guin also freely engages, as an artist and not a scientist, with the Cartesian paradigm prior to any deeper, more academic treatment of similar matters.

Left Hand is a lengthy and nuanced book, but one particular quote in its beginning pages underscores the importance of Le Guin’s thought experiment:

The Truth is a matter of the imagination. The soundest fact may fail or prevail in the style of its telling: like that singular organic jewel of our seas, which grows brighter as one woman wears it and, worn by another, dulls and goes to dust.

Facts are no more solid, coherent, round, and real than pearls are. But both are sensitive. (*Left Hand*, 5).

With this, Le Guin artfully ties together concepts of truth, beauty, knowledge, subjectivity, and feminist epistemology. The overall statement is about how those possessed of knowledge shape, color, value, or de-value truth. While the truth may be objective, the success or failure of that truth is a matter of subjectivity. Though the pearls (metaphorical units of wisdom) are objectively real and true, they are subjectively valuable assets—meaning they are not universally beautiful or important, despite their objective existence. The “extra-Cartesian” revelation to be gained is that those in power over the wisdom decide which pearls are dull and which are bright, useful or trivial. Descartes’ paradigm made no mention of possible differences in the value of knowledge based on who controlled the knowledge. His lack of attention to this issue of valuing pieces of knowledge over others may be owed to his reluctance to assign significance to matters that cannot be determined independently of tradition and social position. His interest was solely directed towards the pearls (truths) and was uninterested in how different religions or social arenas might value the pearls. What Le Guin reveals with her metaphor above is that there is an inherent imbalance to the Cartesian paradigm’s heavy focus on seeking objective knowledge—an imbalance that leaves groups like women epistemically impoverished.

This poverty is owed not to lack of truth, it is owed to lack of interest. A fact fails if it is considered outside the scope of valuable knowledge, it prevails if it falls in line with value system of those in epistemic authority. A fact may be seen as true, but irrelevant to a greater

cause. If the fact is deemed relevant to the interest of those in power, such a pearl of wisdom is deemed priceless. Many in the feminist interest groups would argue that facts that are important to women or the feminine perspective have been glossed over by the male dominated epistemic practice of science. *Left Hand* allows a counterfactual musing upon this unnecessary marginalization. Le Guin reveals that though the Cartesian paradigm was primarily aimed at fact-finding, a greater consideration of the management of facts may be necessary.

Gaiman's "The Mushroom Hunters"

It is fitting that as we discuss Blumenberg's ideas of expanding upon the works of our predecessors that in our final section we discuss a poem dedicated to Ursula K. Le Guin in the year of her death by her fan and fellow author, Neil Gaiman. "The Mushroom Hunters" (2017) (See Appendix A) expands upon Le Guin's interests in extra-Cartesian concepts concerning gendered epistemic practices. For Gaiman, the practices the modern era most readily associate with science – observation, experimentation, and knowledge making—are originally feminine. In the primitive tropes of his poem, he has identified a consonance between the objectives of *mathesis universalis* and perceptively feminine epistemological approaches. In "The Mushroom Hunters" Gaiman creates a scene of "before history" –a prehistoric (he mentions flint and cave paintings) milieu of men, women, and children surviving in a small tribe. In traditionally understood roles, the men go off to hunt and the women stay to forage and raise the children. Men and women approach survival differently. They both survive, but the methodology is different. The male seeks out and conquers to survive and provide.

Gaiman portrays "male knowledge" as resulting in a victory that must be repeated for sustenance. The women survive by wit, innovation, and observation. They make tools for

nurturing, pass down observations, and find varied means of sustenance, rather than singularly hunt prey. Whereas Le Guin's writings create an equality between the sexes by her trope of a genderless society, Gaiman's gendered views on knowledge-making reveal that traditionally female roles and activities have strong parallels to those we associate with modern or traditional science. In this way, Gaiman makes two arguments: that the modern stereotype of men being scientific is unfounded by life-practices, and that women might indeed be superior scientists as their domestic practices are founded on a science-like basis. Gaiman goes so far as to decisively gender the brains of human beings by specifically mentioning that men's brains are different from women's—a difference that is highly debated in neuroscience today⁸³ and could be considered counterfactual. One gender's brain is meant for following, conquering, and killing for sustenance; the other for observing, experimenting, and using resources beyond what is immediately evident—for example, the women learn that if you cook the mushrooms in complex ways you can eat them. An added imbalance in Gaiman's world, one decidedly absent in Le Guin's, is the normative expectation that women raise the children. In *Left Hand*, the androgynous Gethenians share child rearing responsibility, thus ensuring equal professional and lifestyle opportunities for all—a utopic vision of social equality. The injustice of the real-life gender inequality concerning child-rearing is a common theme in second-wave feminist works, such as Betty Friedan's *The Feminine Mystique* (1963), and Le Guin has removed it from a human-like society to show its unnecessary character as a feature of our worldview.

Using a slightly different tactic, Gaiman's poem notes the inequality, but in a manner that indicates admiration for a woman's ability to be both scientist and caretaker, as the science is geared towards the necessity of caretaking—a response perhaps more grounded in reality. As to what end the facts discovered by science would be utilized, that is the motivating factor for

finding them out and setting them down for posterity, is an “extra-Cartesian” concern—one not fully developed by Descartes’ original writings on the paradigm. While Descartes was aware that we are able to generate objective knowledge, he made no comment on to what greater purpose the objective knowledge serves beyond that we should create a grand bank of knowledge. It is arguable that the conquering of nature for human purposes may have been his own motivation for establishing his paradigm, though no specific writing of his explicitly states such to be the case. Gaiman, Le Guin, Velasquez, and Wright offer numerous “extra-Cartesian” considerations but also show the incompleteness of the Cartesian paradigm. If one were so inclined, a book detailing how such works bring to light “extra-Cartesian” concerns, rather than anti-Cartesian or even post-Cartesian, might be valuable for the expansion and preservation of *mathesis universalis*, an idea that is so engrained in Western thought that to discard it is impossible.

APPENDIX A

“The Mushroom Hunters” by Neil Gaiman

Science, as you know, my little one, is the study
of the nature and behaviour [sic] of the universe.

It’s based on observation, on experiment, and measurement,
and the formulation of laws to describe the facts revealed.

In the old times, they say, the men came already fitted with brains
designed to follow flesh-beasts at a run,
to hurdle blindly into the unknown,
and then to find their way back home when lost
with a slain antelope to carry between them.
Or, on bad hunting days, nothing.

The women, who did not need to run down prey,
had brains that spotted landmarks and made paths between them
left at the thorn bush and across the scree
and look down in the bole of the half-fallen tree,
because sometimes there are mushrooms.

Before the flint club, or flint butcher’s tools,
The first tool of all was a sling for the baby

to keep our hands free
and something to put the berries and the mushrooms in,
the roots and the good leaves, the seeds and the crawlers.
Then a flint pestle to smash, to crush, to grind or break.

And sometimes men chased the beasts
into the deep woods,
and never came back.

Some mushrooms will kill you,
while some will show you gods
and some will feed the hunger in our bellies. Identify.
Others will kill us if we eat them raw,
and kill us again if we cook them once,
but if we boil them up in spring water, and pour the water away,
and then boil them once more, and pour the water away,
only then can we eat them safely. Observe.

Observe childbirth, measure the swell of bellies and the shape of breasts,
and through experience discover how to bring babies safely into the world.

Observe everything.

And the mushroom hunters walk the ways they walk
and watch the world, and see what they observe.

And some of them would thrive and lick their lips,
While others clutched their stomachs and expired.

So laws are made and handed down on what is safe. Formulate.

The tools we make to build our lives:
our clothes, our food, our path home...
all these things we base on observation,
on experiment, on measurement, on truth.

And science, you remember, is the study
of the nature and behaviour of the universe,
based on observation, experiment, and measurement,
and the formulation of laws to describe these facts.

The race continues. An early scientist
drew beasts upon the walls of caves
to show her children, now all fat on mushrooms
and on berries, what would be safe to hunt.

The men go running on after beasts.

The scientists walk more slowly, over to the brow of the hill
and down to the water's edge and past the place where the red clay runs.
They are carrying their babies in the slings they made,
freeing their hands to pick the mushrooms.

ENDNOTES

¹ Such inquiries are germane to the fundamental nature of reality, including the relationship between mind and matter, between substance and attribute, and between possibility and actuality.

² For more on the topic of Descartes' ontology see Nolan, Abbruzzese, Alston, Beyssade, and Chappell.

³ For more on the historical circumstances of Descartes' lifetime see Nadler.

⁴ "Whenever men notice some similarity between two things, they are wont to ascribe to each, even in those respects in which the two differ, what they have found to be true of the other. Thus they erroneously compare the sciences, which entirely consists in the cognitive exercise of the mind, with the arts, which depend upon an exercise and disposition of the body. They see that not all the arts can be acquired by the same man, but that he who restricts himself to one, most readily becomes the best executant, since it is not so easy for the same hand to adapt itself both to agricultural operations and to harp-playing, or to the performance of several such tasks as to one alone" (Descartes, *Rules* 96).

⁵ "Some years ago I was struck by how many false things I had believed, and by how doubtful was the structure of beliefs that I had based on them. I realized that if I wanted to establish anything in the sciences that was stable and likely to last, I needed—just once in my life—to demolish everything completely and start again from the foundations. It looked like an enormous task, and I decided to wait until I was old enough to be sure that there was nothing to be gained from putting it off any longer" (Descartes, *Meditations* 2).

⁶ "If a painter had chosen to set a human head On a horse's neck, covered a melding of limbs, Everywhere, with multi-coloured[sic] plumage, so That what was a lovely woman, at the top, Ended repulsively in the tail of a black fish: Asked to a viewing, could you stifle laughter, my friends?" (Horace, "On Unity and Harmony" 166).

⁷ "So lest we chance to assign you this part to age, or a boy's to a man, Always adopt what suits and belongs to a given age" (Horace, "On Characterization" 172).

⁸ The exact term Descartes uses in French is "désagréable" which is readily translated to English as "of poor taste."

⁹ For more on this topic see Roe.

¹⁰ For more on this topic see Pearl.

¹¹ For more on Croce's aesthetics, reference his *The Essence of Aesthetic*, translated by Ainslie.

¹² Section 2 of Kemp's Essay *Croce's Aesthetics* offers further explanation of this complex idea.

¹³ Subjective studies refers to the social sciences, linguistics, gender studies, cultural studies, psychology, etc.

¹⁴ Aristotle's dichotomy of form vs. concept, for example, is comparable to Descartes' mind/body dualism. The two differ on their views of that which is "certain" however. Descartes feels that the self, the world, and God are certain, while Aristotle felt only significant forms and potentiality were certain.

¹⁵ Michael R. Spicher provides a succinct account of Augustinian beauty drawing from *Of True Religion, De Musica, and The City of God*: "Unity, equality, number, proportion, and order are the main elements in Augustine's theory of beauty... Augustine does not systematically present these characteristics of beauty, but they can be found, often in relation to one another, throughout his writings. First, everything exists as a separate whole unit; therefore, each thing has unity. Simply put, something cannot have the potential to be beautiful, unless it exists. And if it has existence, it will also be a unified whole. Thus, unity is a necessary element of beauty."

¹⁶ Further, the more unified something is the more beautiful it will be. Second, concerning equality (or likeness): "The existence of individual things as units, the possibility of repeating them and comparing groups of them with respect to equality or inequality, gives rise to proportion, measure, and number.' Third, 'Number, the base of rhythm, begins from unity.' Number, for Augustine, measures rhythm. Since rhythm is based on number, which Augustine believes is immutable, then it follows that

rhythm is likewise immutable. Fourth, ‘in all the arts it is symmetry [or proportion] that gives pleasure, preserving unity and making the whole beautiful.’ Fifth, Augustine asserts, ‘everything is beautiful that is in due order.’ Moreover, Augustine says, ‘Order is the distribution which allots things equal and unequal, each to its own place.’ In other words, the degree to which things are in their proper place is the degree in which they are beautiful” (Spicher).

¹⁷ The term objective is not germane to Plato, as the concept of object/subject had yet to be articulated in Plato’s time. However the common threads of “fixed-ness” and “abstract-ness” run through both Plato’s conception of the Ideal and Descartes’ conception of an object. Fixed-ness refers to the constant nature of the object, and the abstract-ness refers to the corporeal remove that must accompany all objects as they must be separate from the thinking subject in the Cartesian paradigm, and the Platonic remove of the Ideal from the real world.

¹⁸ “The heart of Plato’s metaphysics is his famous ‘Theory of Forms.’ This theory holds that there is a higher reality beyond the world of change which we come to know through sense experience. This ‘transcendent’ reality consists of Forms: that is eternal, unchanging entities which are grasped by the intellect, not by the senses. Whatever reality our world of experience has it gets from these Forms. What is “real” for Plato is not just what is permanent and unchanging, but, more importantly, what is intelligible and knowable. It is chiefly because of the Forms’ perfect intelligibility that they are more real than the things we grasp through sense experience” (Devereux, 165).

¹⁹ Rule III of *Regulae* states: “We must read the works of the ancients; for it is an extraordinary advantage to have available the labours of so many men both in order to recognise[sic] what true discoveries have already long since been made and also to become aware of what scope is still left for invention in the various disciplines. There is, however, at the same time a great danger that perhaps some contagion of error, contracted from too attentive reading of them, may stick to us against our wil, in spite of all precautions. For authors are ordinarily so disposed that whenever their heedless credulity has led them to a decision on some controverted opinion, they always try to bring us over to the same side with the subtlest arguments; if on the other hand they have been fortunate enough to discover something certain and evident, they never set it forth without wrapping it up in all sorts of complications. (I suppose they are afraid that a simple account may lessen the importance they gain by the discovery; or perhaps the begrudge us the plain truth” (*Rules*, 55)

²⁰ Descartes lists the primitive passions as: wonder, love, joy, sadness, hatred, and desire.

²¹ Bruhn’s essay addresses this.

²² “But this ‘I’ that must exist—I still don’t properly understand what it is: So I am at risk of confusing it with something else, thereby falling into error in the very item of knowledge that I maintain is the most certain and obvious of all. To get straight about what this ‘I’ is, I shall go back and think some more about what I believed myself to be before I started this meditation. I will eliminate from those beliefs anything that could even be slightly called into question by the arguments I have been using, which will leave me with only beliefs about myself that are certain and unshakable” (Descartes, *Meditations* 4).

²³ “I shall stubbornly persist in this train of thought; and even if I can’t learn any truth, I shall at least do what I can do, which is to be on my guard against accepting falsehoods, so that the deceiver—however powerful and cunning he may be—will be unable to affect me in the slightest. This will be hard work, though, and a kind of laziness pulls me back into my old ways. Like a prisoner who dreams that he is free, starts to suspect that it is merely a dream, and wants to go on dreaming rather than waking up, so I am content to slide back into my old opinions; I fear being shaken out of them because I am afraid that my peaceful sleep may be followed by hard labor when I wake, and that I shall have to struggle not in the light but in the imprisoning darkness of the problems I have raised” (Descartes, *Meditations* 3).

²⁴ Al-Ghazali’s most famous philosophical treatise, *Incoherence of the Philosophers*, is considered the most influential texts in the rise of Avicennian School of Islamic philosophy.

²⁵ “So it seems reasonable to conclude that physics, astronomy, medicine, and all other sciences dealing with things that have complex structures are doubtful; while arithmetic, geometry and other

studies of the simplest and most general things—whether they really exist in nature or not—contain something certain and indubitable. For whether I am awake or asleep, two plus three makes five, and a square has only four sides. It seems impossible to suspect that such obvious truths might be false” (Descartes, *Meditations* 2).

²⁶ Descartes states: “I should consider the ideas of them in my thought, in order to see which of those ideas are distinct and which confused. ... I regarded the clearly apprehended propositions of pure mathematics—including arithmetic and geometry—as the most certain of all” (*Meditations*, 24).

²⁷ “Think a little,’ I told him, ‘and you will see that what has preceded will supply the answer; for if simple unity could be adequately perceived by the sight or by any other sense, then, there would be nothing to attract the mind towards reality any more than in the case of the finger we discussed. But when it is combined with the perception of its opposite, and seems to involve the conception of plurality as much as unity, then thought begins to be aroused within us, and the soul perplexed and wanting to arrive at a decision asks “What is absolute unity?” This is the way in which the study of the one has a power of drawing and converting the mind to the contemplation of reality.’

‘And surely,’ he said, ‘this characteristic occurs in the case of one; for we see the same thing to be both one and infinite in multitude?’

‘Yes,’ I said, ‘and this being true of one, it must be equally true of all number?’

‘Certainly.’

‘And all arithmetic and calculation have to do with number?’

‘Yes.’

‘And they both appear to lead the mind towards truth?’

‘Yes, in a very remarkable manner” (Plato, *Republic* 197).

²⁸ The idea of God (that is, of a supremely perfect being) is certainly one that I find within me, just as I find the ideas of shapes and numbers; and I understand from this idea that it belongs to God’s nature that he always exists. This understanding is just as vivid and clear as what is involved in mathematical proofs of the properties of shapes and numbers” (*Meditations* 25).

²⁹ I will cite John Hawthorne’s description of these principles from his paper *Cartesian Dualism*, as I find them the most succinct.

“Axiom 1, Completeness: Principal attributes are complete. Axiom 2, Essentiality: If a substance has properties belonging to some principal attribute, then it is essential to that substance that it has properties belonging to that attribute. Axiom 3, Uniqueness: If a thing x has properties belonging to a principal attribute, then it has a part y which has that principal attribute as its only principal attribute. Axiom 4, Comprehensiveness: For each fundamental property of a thing, there is some principal attribute of the thing that it belongs to. Axiom 5, Exclusivity: No fundamental property belongs to more than one principal attribute” (87).

³⁰ In *Passions* (2), Descartes gives a helpful synopsis of how to determine a lie body from a dead one demonstrating his parallelism:

“6. How a living body differs from a dead one: To avoid this error, let us note that death is never due to the absence of the soul but only to the decay of some principal part of the body. And let us recognize that the body of a living man differs from the body of a dead man in just the same way that a watch or other automaton (i.e. self-moving machine) when it is wound up and contains within itself the physical source of the movements for which it is designed, together with everything else needed for its operation differs from the same watch or machine when it is broken and the source of its movement has stopped working.”

³¹ “Their cause is this: variously agitated spirits come upon the traces of various impressions that have preceded them in the brain, and there make their way by chance through certain pores rather than others Their cause isn’t as conspicuous and determinate as that of the perceptions the soul receives by means of the nerves; and they seem to be mere shadows and pictures of those other more normal perceptions. We should hold off from characterizing[sic] these imaginings, however, until we get further in sorting out the other ones. The illusions of our dreams are cases of that, and so are the day-dreams we

often have when we're awake and our mind wanders idly without deliberately applying itself to anything. All these imaginings are 'passions' of the soul if that word is understood in its general sense, i.e. they are events in respect of which the soul is passive. But when 'passion' is taken in its more proper and exact sense, some of them are passions and others are not" (*Passions*, 6-7).

³² "Spirits" refer to the animal spirits, the particles that move through the body and are responsible for the passions of both the body and soul. Jonathan Bennett in his translation of *Passions of the Soul* defines animal spirits:

"This stuff was supposed to be even more finely divided than air, able to move extremely fast, seep into tiny crevices, and affect the environment within the nerves. Apparently some people thought of spirits as so rarefied as to be almost mind-like, and thus suitable to mediate between mind and body; but Descartes is innocent of this absurdity. Its most famous occurrence is in Donne's superb lines: 'As our blood labours to beget / Spirits as like souls as it can, / Because such fingers need to knit / The subtle knot that makes us man...' " (Descartes, *Meditations* 1).

³³ "But it is even better to call them 'commotions' of the soul, not only because this term is applicable to all the changes that occur in the soul—i.e. to all the various thoughts that come to it—but more particularly because the passions agitate and disturb the soul more forcefully than any other kinds of thought the soul may have" (Descartes 8).

³⁴ Descartes belief in such properties of the Pineal gland is not original. Accounts by Galen (c. 130-210 AD) refuting such attributions to the Pineal Gland indicate that this belief was widely held in Ancient Greece.

³⁵ Aquinas and much of Catholicism hold the ecstasy of the afterlife as the greatest good.

³⁶ "For just as faith teaches us that the supreme felicity of the other life consists only in this contemplation of the Divine Majesty, so we continue to learn by experience that a similar meditation, though incomparably less perfect, causes us to enjoy the greatest satisfaction of which we are capable in this life" (Descartes, *Meditations* 89).

³⁷ The first rule establishes the scope of the soul's concern as itself and not the world around it, reflecting the third rule of his first moral code. With the second, we find an assurance of the immortality of the soul that allows for a freedom of will beyond the fear of death.

³⁸ The third rule serves to direct one's focus towards the natural world, rather than a solely internal contemplation of oneself, despite the self being all that is within our control. It must be remembered that while Descartes did pave the way for psychology and other arenas that focus on the inner workings of the individual soul, he himself viewed the mind/body split as a purely anatomical feature of being human, and to him it required very little subsequent study. The fourth principle takes a moral stance similar to that of Plato and Aristotle, that the greater good of the community is the goal and that one should comport oneself towards the study of knowledge as it benefits us all. The fifth rule serves a second reminder of our own subsidiary nature to the greater good by assuring us that our passions, and the desires that come thereof, are not nearly as crucial as they may appear. Again Descartes cautions us against trusting appearances.

³⁹ Descartes does make a second, rather nostalgic mention of poetry in *Discourse on Method*. He describes the breadth of his course of study at College Royal Henry-Le-Grand in La Fleche: "But I never lost my respect for the curriculum of the college. I knew that the languages learned there are necessary if one wants to grasp the works of the ancients;... poetry has quite ravishing delicacy and sweetness; ..." (Descartes, *Discourse* 3).

⁴⁰ The means by which one gathers observations, develops hypotheses and theories, codifies knowledge, teaches knowledge, and establishes truth.

⁴¹ Butler lays out gender as a concept upheld by a kind of improvised performance based on or running against societal norms and socio-psychological structures.

⁴² For more on this topic see Markie.

⁴³ Most influential is Hegel's phenomenological conception of consciousness (knowing) that rejects knowledge as universally modeled, but knowledge "in the case of" or "such as the case of." For more a summary of Hegel's influence on current epistemology reference Solomon.

⁴⁴ Schopenhauer's influence on modern epistemology is largely based on his concept of sufficient reason and logical necessity. He believed that if something were to be judged true, it must have sufficient logical grounds. For his full epistemological paradigm reference *On the Fourfold Root of the Principle of Sufficient Reason*, translated by Payne.

⁴⁵ Late 15th century (in an earlier sense). From Anglo-Norman mathesis, Middle French mathesie and their etymon post-classical Latin mathesis astrology, the liberal arts, the quadrivium, the science of numbers, science, learning from ancient Greek μάθησις the action of learning from the stem of μαρθάνειν to learn ("Mathesis").

⁴⁶ See Corazon.

⁴⁷ I am referencing the basic tenets for overcoming Cartesian doubt by Kemerling.

⁴⁸ Briefly, scholasticism is a medieval school of philosophy (or, perhaps more accurately, a method of learning) taught by the academics of medieval universities and cathedrals in the period from the 12th to 16th Century. It combined logic, metaphysics and semantics into one discipline, and is generally recognized to have developed our understanding of logic significantly.

⁴⁹ See *On the Order of Things* by Foucault.

⁵⁰ Frege worked in finitistic and externalist means. As he worked primarily as a mathematician, his work largely handled the world in mathematical terms. He believed that objects and concepts are finite and self-contained (in line with Descartes), that the world around us has bearing on our mentation (opposed to Descartes mind/body dualism), and that logic moved beyond Aristotelian syllogism and Stoic propositions. His own system of logic is termed axiomatic predicate logic and depends upon a non-psychologistic viewpoint of logic and cognition. "Before Frege the laws of logic had been regarded as the laws of thought. That is to say it was considered something to do with human mental processes. Frege determined that this couldn't be so—that the validity of a proof couldn't depend on our psychology" (Ayers, Section 1). Frege sought to reconcile the mathematical, which until after the inception of his work appeared to be objective and eidetic in nature, and the logical without recourse to psychology or Idealism. His conception of number theory is most helpful in illuminating this accomplishment. I draw this brief explanation from Graham Priest's lecture on Frege:

"A number is a set.

A set is the extension of a condition. Any condition defines a set. (Ex: The condition "is red" defines the set of all red things)

A number is a set. (Ex: the condition "is three" is the set of all things that are three).

Instead of a number being defines by an essence or eidos of that number (this is to say by the archetype of an ideal version of that number or by some divine/otherworldly presence of that number) the number is defined by its external existence as a common thread of finite things that are external to human perception. He then used this conception of numbers and logic could be made universally practical by the design of an engine of inference that could be applied to all conditions, not only syllogisms or propositions. He in essence deployed the mechanisms of Algebra and Geometry (variables and representational proofs) to logic. This required a new system of expression and higher specificity of definitions of "sets" than had previously existed. His work can be seen as a critical continuation of the work of Descartes (who united Algebra and Geometry into a singular approach to mathematics, but failed to do so with any means beyond the numerical) and Leibniz (who generated a system of universal calculus, but failed to create a system that could be used beyond combinatorial circumstance)" (Priest).

⁵¹ "Stress has been laid upon this descent because it affords a good example of the unaccountability of artistic talent. What a eugenist would have said about breeding a painter from such stock? But once it was decreed that Joseph should paint, what more could Fate do to ensure that he should paint in Derby? ... There was room for a painter in Derby, and that being so, who should be better fitted to fill that room than the son and grandson of respected citizen of Derby?" A fascinating remark from

Kaines-Smith and Bemrose denoting the dubious value placed upon the profession of artist, even in the eighteenth century (3).

⁵² Also the teacher of his professional rival Joshua Reynolds (1723-1792).

⁵³ "The sole reason that we can discover for the comparatively obscure position in public estimation to which Joseph Wright has been relegated is that his work is not known" (Kaines-Smith and Bemrose, 32).

⁵⁴ The stance is that his moderate nature was not detrimental per se, but that it largely contributed to his lack of professional recognition. I argue that is moderation was not between extremes of skill, nor that his upper-provincial caste impaired him in anyway. Moderation can often indicate a balanced position between polar extremes. The beauty of his nature was that it was between the growing divide in the philosophic discourse that was gradually pushing the arts into modes that either fervently favored romantic expression, or that conversely favored universality of form. Recalling that Wright was painting just prior to Kant's publication of the Critiques and that the historical beginnings of formalism had not yet occurred, Wright's work offers an emphasis on universality (a theme that dominates his Science Paintings) that affords a more Cartesian conversation, rather than Kantian.

⁵⁵ H. Cheney Bemrose and Barker both reference this same portion of this letter.

⁵⁶ For a more in-depth description of this concept, see Janiak.

⁵⁷ Many of Descartes physical theories are disputed in Book two, such as Descartes theory of vortices in which the rotation of planets is due to a spinning liquid inside the planetary core. In terms of methodology however, the two philosophers differ only in the practical reaches of their natural philosophies. Both insist upon reproducible means, reason/hypothesis standards, and verifiable mathematics to secure axiomatic laws.

⁵⁸ Recall from Chapter 1 that Descartes insists that one qualitatively proceed from that which is clear and distinct.

⁵⁹ Kant will famously criticize Burke in the First Critique for the psychologically driven nature of his taxonomy, "To make psychological observations, as Burke did in his treatise on the beautiful and the sublime, thus to assemble material for the systematic connection of empirical rules in the future without aiming to understand them, is probably the sole true duty of empirical psychology, which can hardly even aspire to rank as a philosophical science" (First Introduction to the Critique of Pure Reason). Kant has declared here that Burke has extended a kind of undue pragmatism towards the beautiful and the sublime, as there is no attempt to understand the mechanism of these psychological reactions. Simply put, Kant takes issue with Burke's rationally unqualified schema of aesthetics, as it does not universally apply and relies solely on perceived experience. Psychological responses to any aesthetic experience are not firmly fixed from person to person and therefore cannot be depended upon to issue reliable truths. The irony of Kant's own pursuit of these topics towards the end of his life is palpable, however there Kant does concede the *sensus communus* indeed provides the kinds of truths when considering judgements of taste. These truths are far removed from rational scientific knowledge and are largely concerned with morality.

⁶⁰ The hierarchies in painting are those formalized by the European academies in the late 17th century, in particular the *French Académie de peinture et de sculpture*, which held a central role in Academic art. The fully developed hierarchy from utmost to lowest is as follows: Allegorical, religious, or historical painting; Portrait painting; Genre painting; Landscapes; Animal paintings; and finally, Still life. The hierarchy was based on a distinction between art that made an intellectual effort to "render visible the universal essence of things" (*imitare* in Italian) and that which merely consisted of "mechanical copying of particular appearances. For more on this topic see Belton.

⁶¹ Full title: *An essay on prints: containing remarks upon the principles of picturesque beauty; the different kinds of prints; and the characters of the most noted masters.*

⁶² A force that eventually begat such trekking clubs as the Sierra Club and photojournalistic traditions such as that found in National Geographic Magazine.

⁶³ See Egerton.

⁶⁴ Egerton states that the piece was exhibited at the Society of Artists (London and Liverpool) in 1769, and was offered, but never purchased by, several years later to the Empress of Russia.

⁶⁵ Egerton indicates that the scallop shells pinned to the hats of the boys indicates a pilgrimage: "The scallop shells in their hats indicate that they are pilgrims, come to see a 'holy one'" (92).

⁶⁶ This claim is based on portraiture of these figures by Wright and other artists.

⁶⁷ This is not to say that Descartes disapproved of women participating in natural philosophy. He himself held a professional epistolary relationship with Princess Elizabeth of Bohemia, discussing mathematics and physics. But women participating in scientific or philosophical discourse was certainly not the norm of his time, and thus would not have figured into his paradigm of the proper setting for science.

⁶⁸ There is an in-depth description of the cost of Ferguson's (and others') lectures as well as notes on the make-up of their attendees (Elliot 43-45).

⁶⁹ The absolutism of reality is Blumenberg's conception of the terror of existence. Nichol's crystallizes this concept: "The 'absolutism of reality' is described by Blumenberg as a 'limit concept' (*Grenzbegriff*) that is based upon the 'common core of all currently respected theories on the subject of anthropogenesis.'" This notion of a "limit concept," or *Grenzbegriff*, seems to have been derived from Blumenberg's earlier description of the life-world as a *Grenzbildung* or "limit representation" that is bound up with the revised phenomenological reduction of Husserl's *Krisis-Schrift*. Husserl, according to Blumenberg, saw the life-world as not an object of science but as a "limit representation," as the "construction of an ahistorical beginning of history, of an atheoretical prehistory." The philosopher, in exposing the life-world to conscious analysis, is always already outside of the life-world. The life-world is thus posited as a "limit representation" that embodies what is irretrievable to thought precisely because, in being self-evident, it is also by and large unconscious. Against this background, the "limit-concept" of the "absolutism of reality" can be seen to function in a similar way, to the extent that it might emerge not from the phenomenological, but rather from what might be dubbed the anthropological reduction (Nichol's coinage, not Blumenberg's) (109-110).

⁷⁰ Concepts such as Genesis and the Fall indicate clear moments of beginning with transparent causes.

⁷¹ Recall that Descartes understood the passions to be caused by the physical movement of "animal spirits" (small particles) as they stimulate the Pineal gland.

⁷² "If a man is offered a fact which goes against his instincts, he will scrutinize it closely, and unless the evidence is overwhelming, he will refuse to believe it. If, on the other hand, he is offered something which affords a reason for acting in accordance to his instincts, he will accept it even on the slightest evidence. The origin of myths is explained in this way" (Russell, 97).

⁷³ For more on this theory see Doucet, A., & Mauthner.

⁷⁴ Plato's dialogues all reflect the general stance of positivism.

⁷⁵ For more information on Comte's positivism, reference Bourdeau.

⁷⁶ For a more in depth discussion of these five criticisms, see Young.

⁷⁷ Hein and Kosmeyer define feminine perspective as: "Feminine" is a descriptive identification that points to the presence of a woman's perspective or of attributes stereotypically ascribed to women" (5).

⁷⁸ A recent series of works comparing the philosophical work of Descartes to that Therese of Avila might provide more food for thought on this matter. See Goldhill.

⁷⁹ For a more in depth analysis of Foucault's discussion of Las Meninas see Gugleta.

⁸⁰ Cervantes chose mental illness/a philosophic education as his hero's pitfall, de Tormes chose an impoverished existence and systemic oppression for his.

⁸¹ For an introduction into the many means by which science fiction engages with philosophy, reference Johnson's lectures.

⁸² For more on this type of philosophical speculation reference: Borgmann.

⁸³ Most neuroscientists agree the organ's morphology is unisex, however the neural patterning and activity is argued by some to be gendered. For a brief introduction see Price.

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